FLOOD PLAIN INFORMATION LLAGAS CREEK UNIT I SANTA CLARA COUNTY, CALIFORNIA JULY 1975

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

INCLUDING

EDMUNDSON (LITTLE LLAGAS), CHURCH, SAN MARTIN, NEW, CENTER, CORRALITOS, TENNANT, MAPLE, AND FOOTHILL CREEKS

SANTA CLARA COUNTY, CALIFORNIA

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1975
REF

PREPARED FOR SANTA CLARA VALLEY WATER DISTRICT
BY THE U. S. ARMY ENGINEER DISTRICT, SAN FRANCISCO
CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA
JULY 1975

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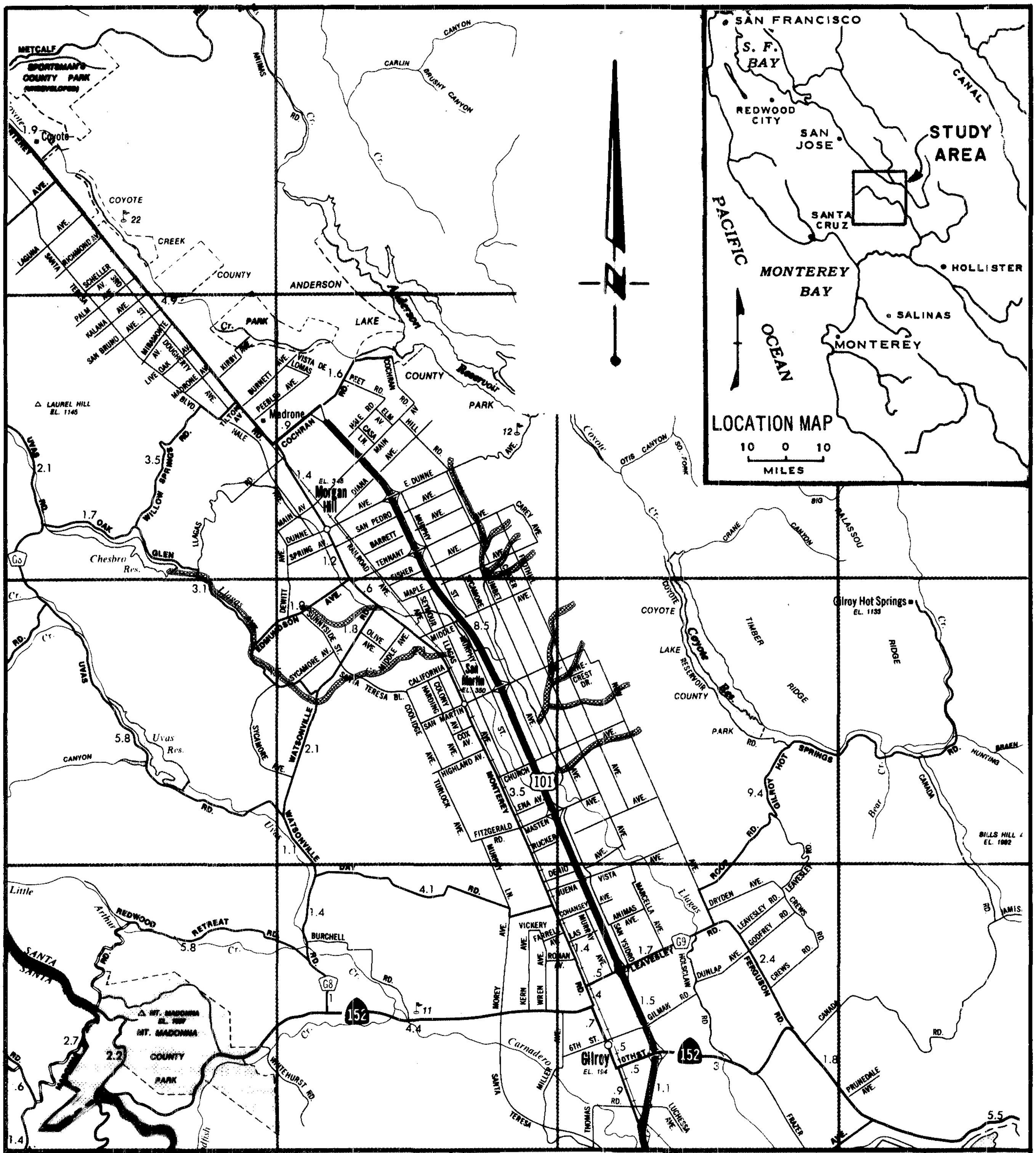

LEGEND

- 5 INTERSTATE HIGHWAY
- 101 U. S. HIGHWAY
- 1 STATE HIGHWAY
- J1 COUNTY ROAD
- ▨ STUDY LIMITS

0 1 2 3 4 5 6

SCALE IN MILES

BASE MAP REPRODUCED BY
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SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY CALIFORNIA

GENERAL MAP

JULY 1975

PLATE 1

PREFACE

The area covered by this report is subject to flooding from Llagas Creek and the upper tributaries of Little Llagas Creek. Much of the predominantly agricultural land within the flood plains of these creeks was inundated by floods in 1955, 1962, 1967 and 1969. Studies indicate that floods even larger than those of the past are possible. The open areas in the flood plains are presently undergoing development to residential and more urban uses and are under pressure for continued development.

This is the first of four reports on Llagas Creek and its tributaries. The remaining reports will examine Llagas Creek and its tributaries from Llagas's crossing at Monterey Highway to its confluence with the Pajaro River.

This report has been prepared because knowledge of flood potential and flood hazards is important in land use planning and for management decisions concerning flood plain utilization. It includes a history of flooding in the Little Llagas Creek Basin and identifies those areas that are subject to possible future floods. Special emphasis is given to these possible future floods through maps, photographs, profiles, and cross sections. The report does not provide solutions to flood problems; however, it does furnish a suitable basis for the adoption of land use controls to guide flood plain development and thereby prevent intensification of the loss problems. It will also aid in the identification of other flood damage reduction techniques such as works to modify flooding and adjustments including floodproofing which might be embodied in an overall flood plain management (FPM) program. Other FPM program studies, those of environmental attributes and the current and future land use role of the flood plain as part of its surroundings, would profit from this information.

At the request of the Santa Clara Valley Water District and with the endorsement of the California Department of Water Resources, this report was prepared by the San Francisco District Corps of Engineers under continuing authority provided in Section 206 of the 1960 Flood Control Act, as amended.

Assistance and cooperation of the California Department of Transportation, the Santa Clara Valley Water District, the County of Santa Clara, the South Santa Clara Valley Water Conservation District, the Soil Conservation Service, the Loma Prieta Soil Conservation District, the City of Morgan Hill, and private citizens in supplying useful data and photographs for the preparation of this report are appreciated.

Additional copies of this report can be obtained from the Santa Clara Valley Water District. The San Francisco District Corps of Engineers, upon request, will provide technical assistance to planning agencies in the interpretation and use of the data presented as well as planning guidance and further assistance, including the development of additional technical information.

BACKGROUND INFORMATION

Settlement [1]

In 1770 Pedro Fages succeeded Gaspar de Portola as the commander of the presidio at Monterey and undertook one of the first land expeditions to San Francisco Bay. In 1772 Fages repeated this expedition which was recorded by Fray Juan Crespi, the diarist of the earlier Portola expeditions in Alta California.

The second Fages party left Monterey on March 20, 1772, crossed the Salinas River, climbed the Gavilan Mountains, and descended into San Benito Valley. On March 22, they entered the Santa Clara Valley, passed Tesquisquita Slough and San Felipe Lake, and traveled the broad, oak-scattered valley which was then named the San Bernardino Valley. That night, the party pitched camp on the banks of a stream just north of what is presently Gilroy. On this spot, Fages bestowed the name, "Little Llagas de Nuestro Padre San Franciso" (Stigmata of Our Father St. Francis); the name that has clung to it ever since. On March 23, the party followed the west side of the Santa Clara Valley and climbed the low hills that extend eastward into the valley near the present town of San Martin. That night the party camped near Coyote Creek on the shores of a lake named San Benvenuto by Crespi (now erroneously called San Benito), and then proceeded along the edge of the eastern foothills and crossed into what is now Alameda County.

Because of difficulties of supplying provisions to the various missions and presidios throughout Alta California, Governor Felipe de Neves, under orders from Viceroy Antonio Maria Pucareli, selected certain areas for agricultural settlements during a journey in 1777. One of these selected areas was to become the fertile Santa Clara Valley. The Spanish settlers that followed the route of the Fages expedition found elk and large herds of antelope on the Valley plain. These settlers used the Valley lands mainly as cattle ranges, but grew various grains, vegetables and some fruit trees around the way stations and settlements. According to records, floods inundated the marshlands of the Santa Clara Valley in 1778.

On February 3, 1834, Governor Jose Figueroa granted Rancho San Francisco de Las Llagas to Carlos Castro who held important official positons in both Santa Cruz and San

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[1] Material for this section was taken from:

a. "History of Santa Clara County," by Eugene Sawyer, 1922.

b. "Historic Spots in California," by Mildred Brooke Hoover, Hero Eugene Rensch and Ethel Grace Rensch, 3rd Edition revised by William N. Abeloe, Stanford University Press, 1970.

c. "California – A History," by Andrew F. Rolle, 2nd Edition, Thomas Y. Cromwell Co., NY, (3rd printing July 1970, Copyright 1969).

Jose. This grant covered a strip along Llagas Creek from north of Gilroy to south of Morgan Hill at the present Tennant Avenue. Rancho Ojo de Agua de la Coche (Sow's Spring), located north of Tennant Avenue, was granted to Juan Maria Fernandez on August 4, 1835.

Both of these ranchos were purchased by an Irish immigrant named Martin Murphy who arrived in California with his family in the 1840's. He built an adobe residence between the present town of Morgan Hill and a hill west of the town which became known as Murphy's Peak. Rancho San Francisco de Las Llagas was patented to James and Martin Murphy, sons of Martin Murphy, Sr., on March 19, 1868. Rancho Ojo de Agua de la Coche was granted to J. C. Murphy, a grandson of the elder Murphy, at about the same time.

The towns of Morgan Hill and San Martin became important trade and transportation centers for flourishing ranch and agricultural businesses. These towns are presently famous for their wineries and outlying vineyards, orchards and ranches.

The Stream and Its Valley

Llagas Creek originates on Mt. Chual in the Santa Cruz Mountains and flows for about five miles before entering Chesbro Reservoir which was built in 1955. From Chesbro Reservoir, Llagas Creek runs about six miles east-southeast through Paradise Valley to the South Santa Clara Valley which is about 3 miles wide at San Martin. Llagas Creek and its tributaries drain portions of the Santa Cruz mountains, the Diablo Range and the South Santa Clara Valley. At the Santa Clara-San Benito county line, Llagas Creek confluences with the Pajaro River which discharges into the Pacific Ocean at Monterey Bay.

The watersheds of the Llagas Creek Unit I study area are located on both the west and the east sides of the South Santa Clara Valley. The streams and their approximate study limits are shown on Plates 1 and 2.

The west side watersheds include the upper reaches of Llagas Creek, Edmundson (Little Llagas) Creek and West Little Llagas Creek. The study limits of Llagas Creek extend from Chesbro Dam downstream to the Southern Pacific Transportation Company bridge. The study limits of Edmundson (Little Llagas) Creek extend from Edmundson Avenue downstream to its confluence with West Little Llagas Creek at Watsonville Road including a portion of Little Llagas Creek between Watsonville Road and Monterey Highway.

The east side watersheds include the upper reaches of Church, San Martin, New, Center, Corralitos, Tennant, Maple and Foothill Creeks. The study limits of these creeks extend generally from just upstream of their last public road crossing downstream to their confluence with larger streams, except that the downstream study limit of Corralitos is at Colombet Avenue.

Elevations within the drainage areas range from about 290 to 3,560 feet above mean sea level on the west side and from about 230 to 1,500 feet above sea level on the east side. Within the study limits, channel slopes range from about 25 feet per mile to about 500 feet per mile. Each watershed was studied in detail for its contributing flow. Drainage areas of each watershed at major locations of contributing flow are shown in Table 1.

The climate of the study area is generally moderate with dry, somewhat hot summers and cool winters. The wet season lasts from October to May, but the majority of the precipitation occurs from December through March. The west side of the study area receives a mean annual precipitation which varies from about 18 inches to about 45 inches. The majority of the east side area receives a mean annual precipitation of about 18 inches.

TABLE 1
DRAINAGE AREAS

Location	Drainage Area sq. mi.
West Side Watersheds	
Llagas Creek at Chesbro Dam	19.3
Llagas Creek at S.P.T.C. Bridge	27.9
Edmundson (Little Llagas) Creek at Watsonville Road	1.3
Little Llagas Creek at Monterey Highway	5.6
East Side Watersheds	
Foothill Creek at Tennant Creek	0.6
Maple Creek at Tennant Creek	0.5
Tennant Creek at Corralitos Creek	3.3
Corralitos Creek at Colombet Avenue	4.6
Center Creek at San Martin Creek	0.7
New Creek at San Martin Creek	1.0
San Martin Creek at Center Avenue	2.4
San Martin Creek at Little Llagas Creek	4.1
Church Creek at Little Llagas Creek	1.7
TOTAL STUDY AREA	43.9

Developments in the Flood Plains

The majority of the flood plains throughout the study area are presently agriculturally developed. However, scattered units of single family residences and small commercial developments exist along each stream. Plans for more intensive residential and commercial development are presently on file with local agencies and can be expected to be constructed in the near future.

On the west side of the study area, scattered units of single family residences are being developed along Llagas Creek from Llagas Avenue to Sycamore Avenue. A 285-dwelling unit mobile home park is being developed on the northerly bank of Llagas Creek about 1,000 feet downstream of Santa Teresa Boulevard. An existing gravel quarry is being operated about 2,000 feet upstream of Monterey Highway. Along Edmundson (Little Llagas) Creek an 84-dwelling unit subdivision exists about midway between Edmundson Avenue and Watsonville Road. Another 35-unit subdivision has been approved for construction just downstream. Several commercial buildings exist just southeasterly of Watsonville Road at Monterey Highway.

On the east side of the study area, scattered existing single family residences and small commercial sites are located adjacent to Center, Foothill, New and San Martin Avenues in potentially flood prone areas. A 49-dwelling unit subdivision is currently under construction in the Tennant Creek flood plain at San Pedro Avenue and Hill Road. Another 280-unit subdivision is being planned in the Tennant Creek flood plain adjacent to Hill Road between Dunne Avenue and an extension of Barrett Avenue.

FLOOD SITUATION

Sources of Data and Records

The one stream gage within the study area is on Llagas Creek about 500 feet upstream of Llagas Avenue and 1,300 feet downstream of Chesbro Dam. The U.S.G.S. has operated this gage, No. 11-1535.00, Llagas Creek Near Morgan Hill, from its installation in 1952 until it was taken over by the Santa Clara Valley Water District in 1971. Table 2 shows the highest discharges and crest elevations that have been recorded at this gage since the construction of Chesbro Dam in 1955.

TABLE 2
PAST FLOOD CREST ELEVATIONS
AT LLAGAS CREEK STREAM GAGE

Date of Crest	Estimated Peak Discharge c.f.s.	Stage ft.	Elevation[a] m.s.l.
2 April 1958	3,190	8.45	442.4
16 March 1967	1,700	6.39	440.4
26 January 1969	1,300	5.86	439.8
1 February 1963	906	4.51	438.5

[a] Feet, mean sea level datum, based on control elevation of 434.8 equal to stage of 0.8 feet.

Two precipitation gages located within the study area were used to calibrate hydrologic information for this report. These gages are the Morgan Hill-SCS gage and the Morgan Hill-Bossana gage which are located about 0.2 miles east of and about 7.0 miles west of Morgan Hill, respectively. Data at these gages were analyzed by the California Department of Water Resources in their 1972 Memorandum Report, "Hourly Precipitation Depth-Duration-Frequency in California." The approximate locations of the stream gage and precipitation gages are shown on Plate 2.

To supplement the records of the gaging stations, published reports, newspaper files and historical records were searched for information on past floods. Two reports of special significance are "Reconnaissance Report on Floods of January 21 - 24, 1967" by the Santa Clara Valley Water District, and "Flood Problems in Santa Clara County" 1952, by the Santa Clara County Planning Commission. Furthermore, aerial photographs taken by the Santa Clara Valley Water District during flooding in the east side of the study area on February 24, 1969, were especially valuable in evaluating difficult problem areas. These sources have contributed significantly in evaluating the flood characteristics in the study area.

Maps from several sources were used in the preparation of this report. Plate 1 is based on a California State Automobile Association road map and is presented with their permission. The 1968 photo-revised U.S.G.S. quadrangle sheets entitled, "Mt. Sizer," "Gilroy," "Morgan Hill," "Mt. Madonna," "Santa Teresa Hills," and "Loma Prieta" were used for general hydrologic studies and as the basis of Plate 2. Topographic flood plain maps with 2-foot contour intervals were provided by the Santa Clara Valley Water District along with edited field cross sections and sufficient control data to extend the maps to the study limits of this report. These topographic maps and support data were used as the basis for the flooded area maps, profiles, and cross sections shown in this report.

Sizes and locations of bridges and culverts were obtained from the "Master Storm Drainage Plan" prepared by the Santa Clara County Department of Public Works. All bridges and culverts within the study limits of each stream were verified by detailed field surveys to adequately evaluate their effect on potential flooding.

Flood Season and Flood Characteristics

The flood season in the Llagas Creek Unit I study area generally occurs from October through April when flooding may be caused by intense rainstorms over the basin. Floodflow stages in any of the streams can rise rapidly in a relatively short time with high velocities in the main channel.

The characteristics of any flood event in the study area are determined by prior rainfall, soil condition, vegetation, development, topography and available storage capacities in Chesbro Reservoir and other effective ponding areas. Such ponding areas include natural or constructed depressions throughout the basin which may delay local runoff from adding to peak flows. Some examples of ponding areas in the study area include the gravel quarry just off-stream of Llagas Creek above Monterey Highway, the confluence area of Edmundson (Little Llagas) and West Little Llagas Creeks at Watsonville Road and Monterey Highway, and many of the roads and inadequately-sized culverts in the east side area.

When flood stages of any stream exceed the limiting elevations of its streambanks or ponding areas, portions of the stream's floodflow may leave its designated watershed and enter another. Many of the designated watershed divides within this study area are poorly defined and some overflows can be expected during even moderate flooding conditions.

Factors Affecting Flooding and Its Impact

Obstructions to floodflows — Natural obstructions to flood flows include trees, brush and other vegetation growing along the streambanks in floodway areas. Man-made encroachments in or over the stream such as small irrigation dams, fences, foot bridges and culverts can also create more extensive flooding than would otherwise occur. Representative obstructions to floodflows are shown in Figures 1 through 14.

Man-made encroachments and debris deposited in floodways by local residents are serious factors which affect the flooding potential of many streams in the study area. Trees, brush and other vegetation growing in floodways are natural impediments to floodflows and, depending on their condition, may increase flood heights. However, during floods natural vegetation may be washed away and carried downstream along with other debris to collect on bridges and other obstructions to flow. As floodflow increases, masses of debris may break loose and surge downstream until another obstruction is encountered. Debris may collect against a bridge until the load exceeds its structural capacity and the bridge is destroyed. The limited capacity of obstructive bridges or culverts, collections of debris at the culvert mouth or a combination of these factors retard floodflows and result in flooding upstream, erosion around the culvert entrance and bridge approach embankments, and possible damage to the overlying roadbed.

In general, obstructions and debris restrict floodflows and result in overbank flows and unpredictable areas of flooding, damage to or destruction of bridges and culverts and an increased velocity of flow immediately downstream. It is impossible to predict the degree or location of the accumulation of debris; therefore, for the purposes of this report, it was necessary to assume that there would be no accumulation of debris to clog any of the bridge or culvert openings in the development of the flood profiles.

Chesbro Dam on Llagas Creek provides some flood reduction as described hereinafter. There are also some small ponding areas within the several creek systems which provide some very minor reduction in peak flow. Within the study area, Llagas Creek is spanned 9 times by bridges and the other streams have a total of 32 culverts and small bridges, many of which are obstructive to floodflows. Pertinent information on some of the bridges and culverts can be found in Table 5.

Flood Damage Reduction Measures

These measures presently include the existing Chesbro Reservoir and minor programs for construction and maintenance in the study area which are performed by local agencies with limited funds. Federal, state and local agencies have also participated in planning and construction of some major flood damage reduction measures within the study area.

The Upper Llagas Creek P. L. 566 Watershed Work Plan, which has been prepared by local agencies with the assistance of the Soil Conservation Service, includes the following measures which affect the study area. One such proposed measure is a new channel located parallel to and about 1,100 feet southwest of Monterey Highway which will divert Edmundson (Little Llagas) and West Little Llagas Creek. Another measure is an improvement of Little Llagas Creek from about Seymour Avenue to its confluence with Llagas Creek between Church and Masten Avenues. This improvement has been partially completed as a part of the construction of the South Valley Freeway.

Chesbro Reservoir, constructed in 1955 by the South Santa Clara Valley Water Conservation District, presently contains approximately 8,100 acre-feet of storage which provides some flood protection on Llagas Creek. The total discharge capacity of the dam is about 10,500 cubic feet per second. The degree of protection afforded by the reservoir depends on the actual acre-feet available for flood storage. The reservoir is presently

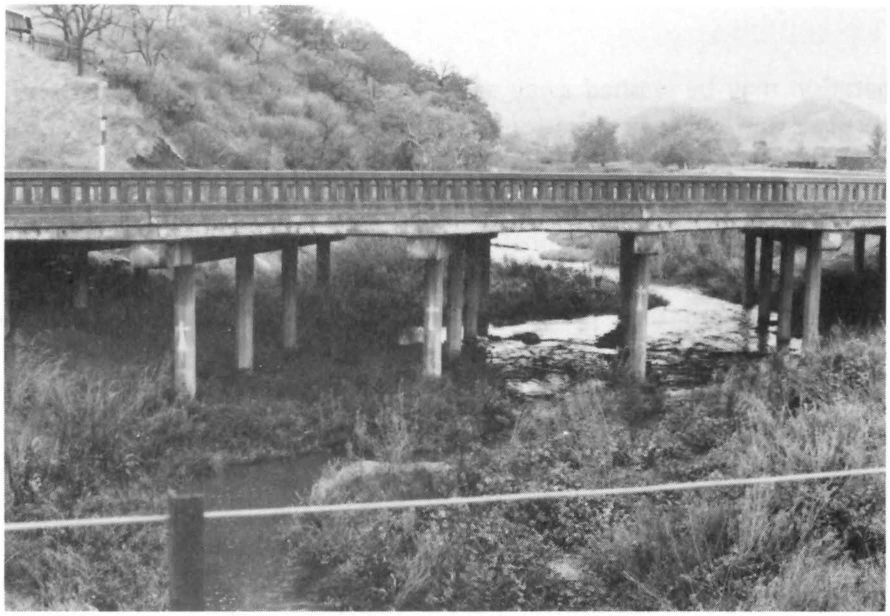

Figure 1 – Llagas Creek at Monterey Highway
(Looking Upstream)

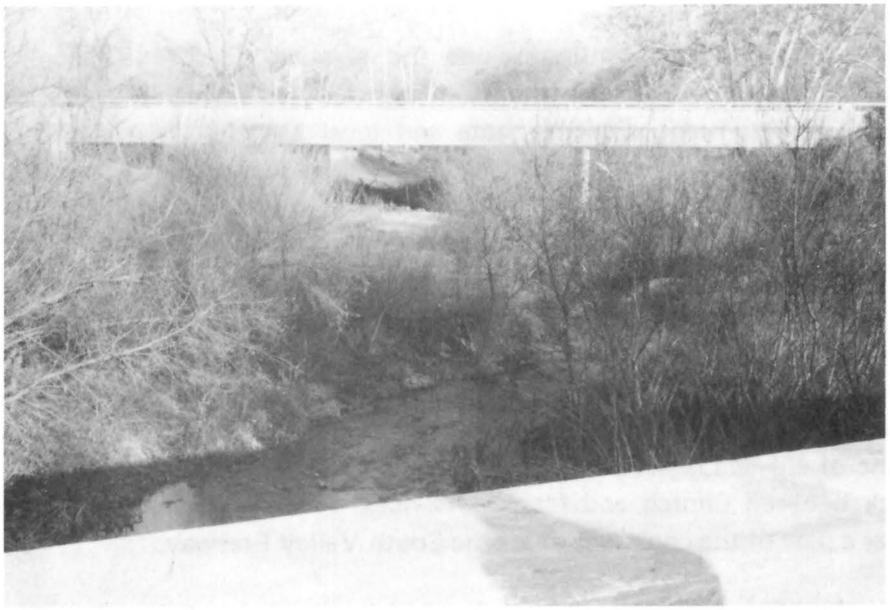

Figure 2 – Llagas Creek at New Watsonville Road
(Looking Downstream)

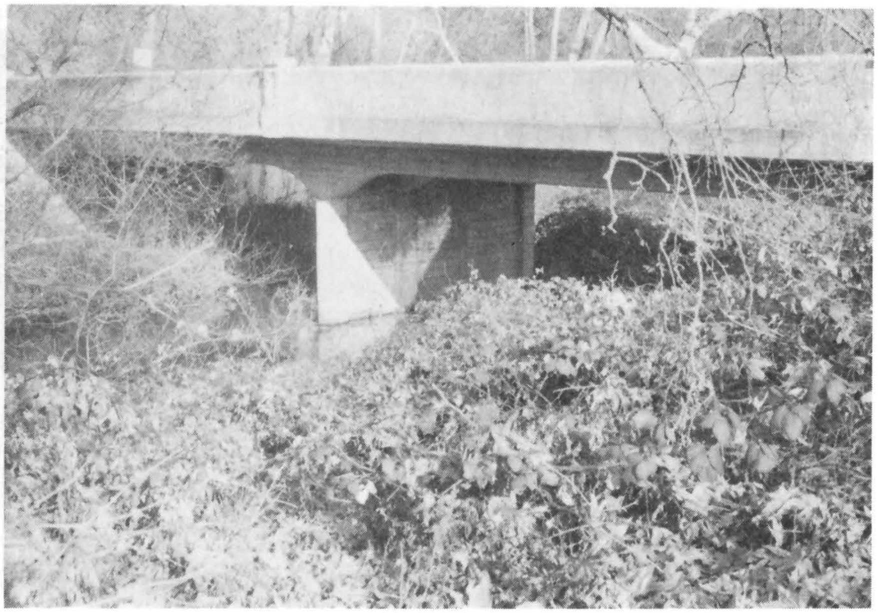

Figure 3 – Llagas Creek at Llagas Avenue
(Looking Downstream)

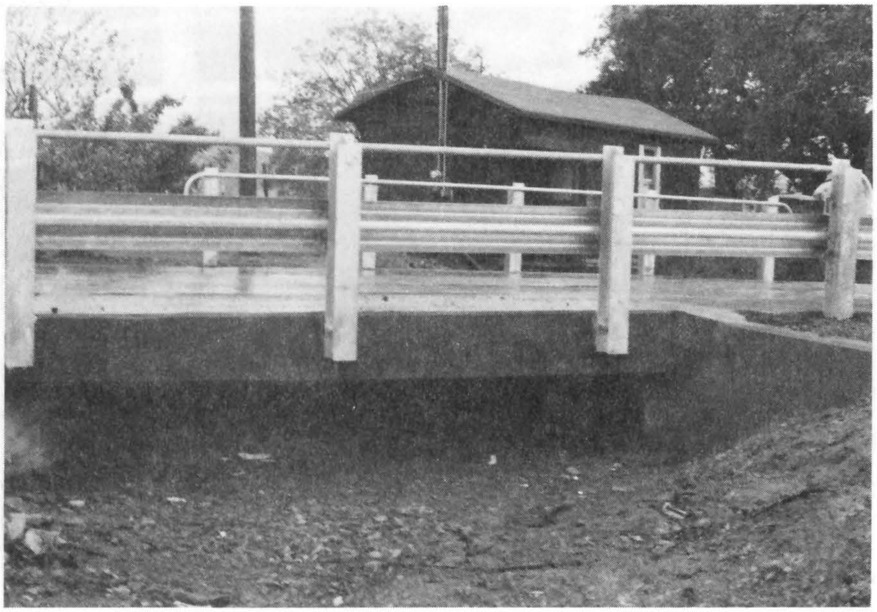

Figure 4 – Church Creek at Colombet Avenue
(Looking Downstream)

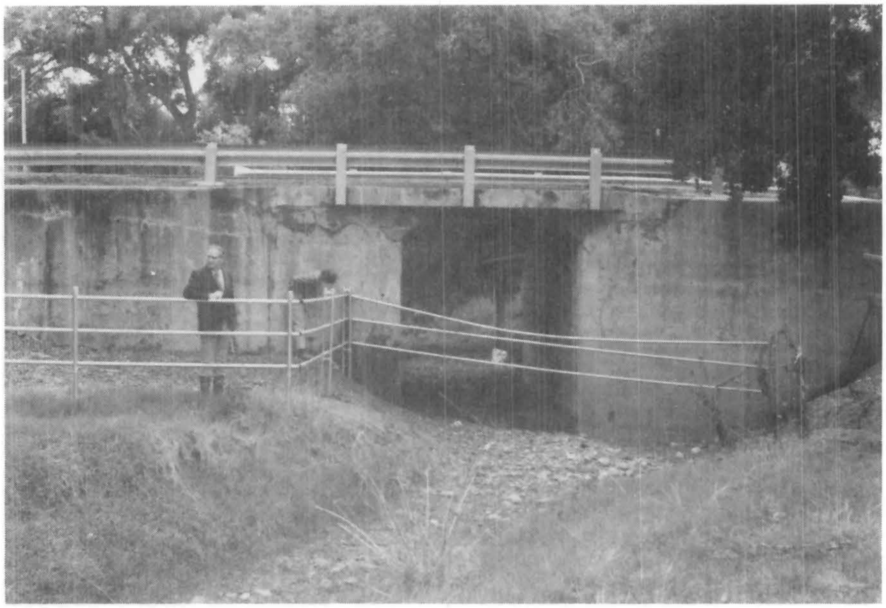

Figure 5 – Church Creek at New Avenue
(looking Downstream)

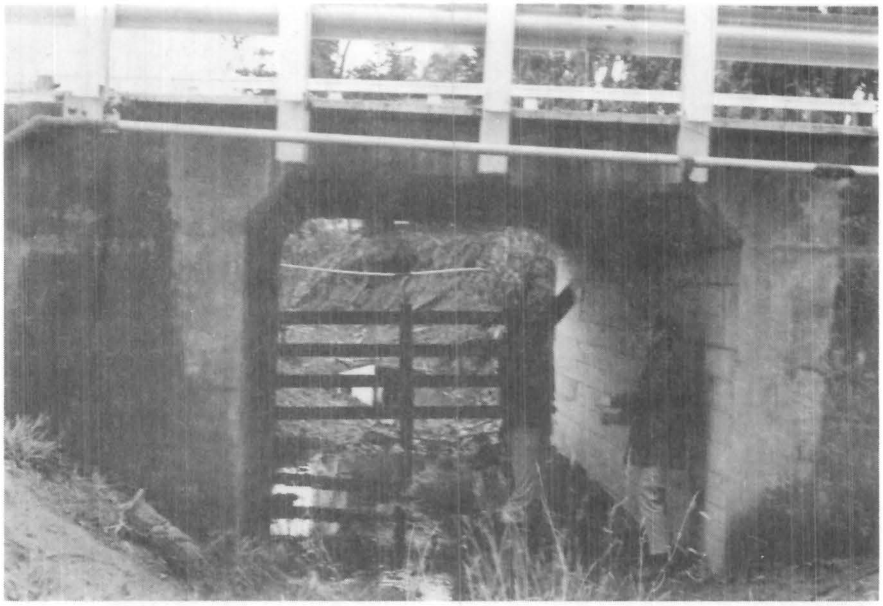

Figure 6 – New Creek at Center Avenue
(Looking Upstream)

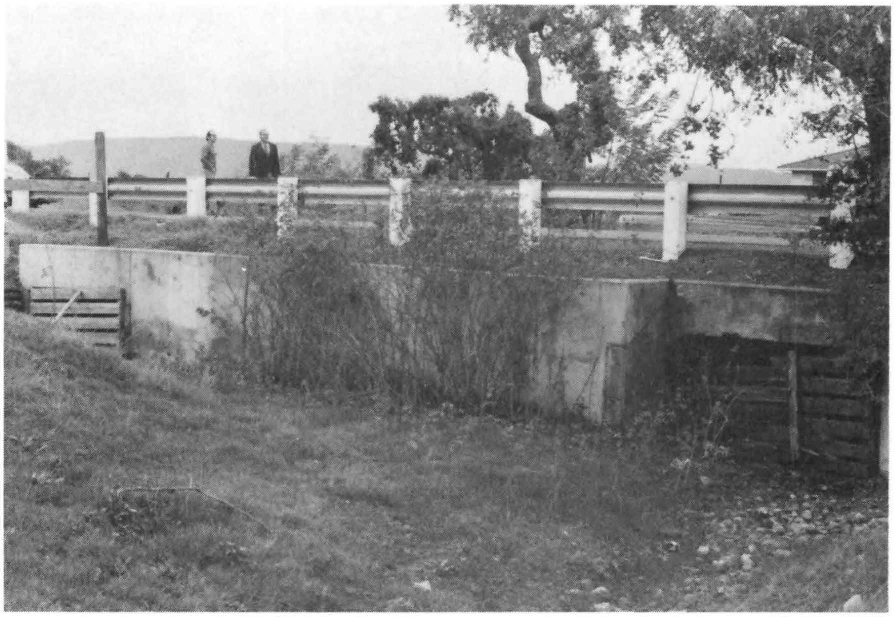

Figure 7 – New Creek at New Avenue
(Looking Downstream)

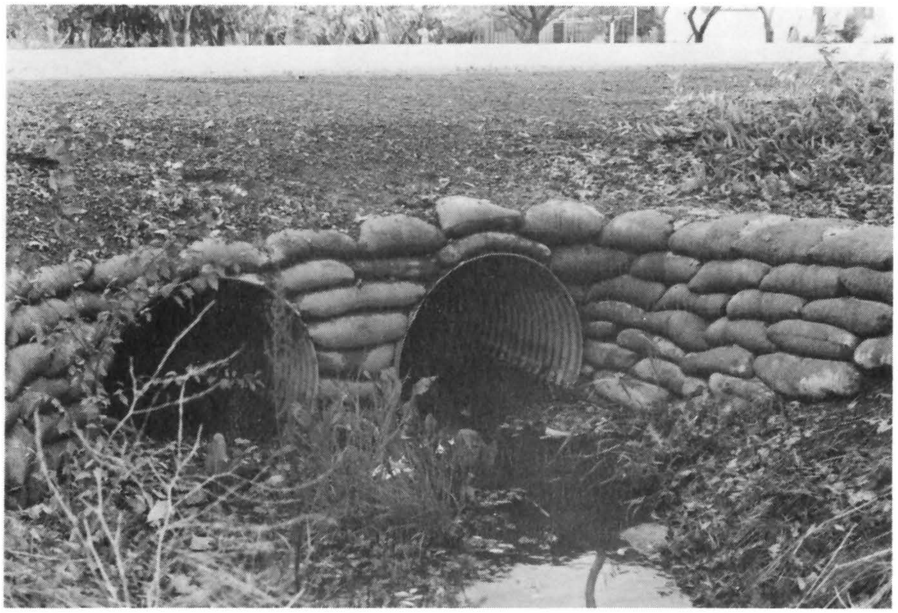

Figure 8 – Center Creek at San Martin Avenue
(Looking Downstream)

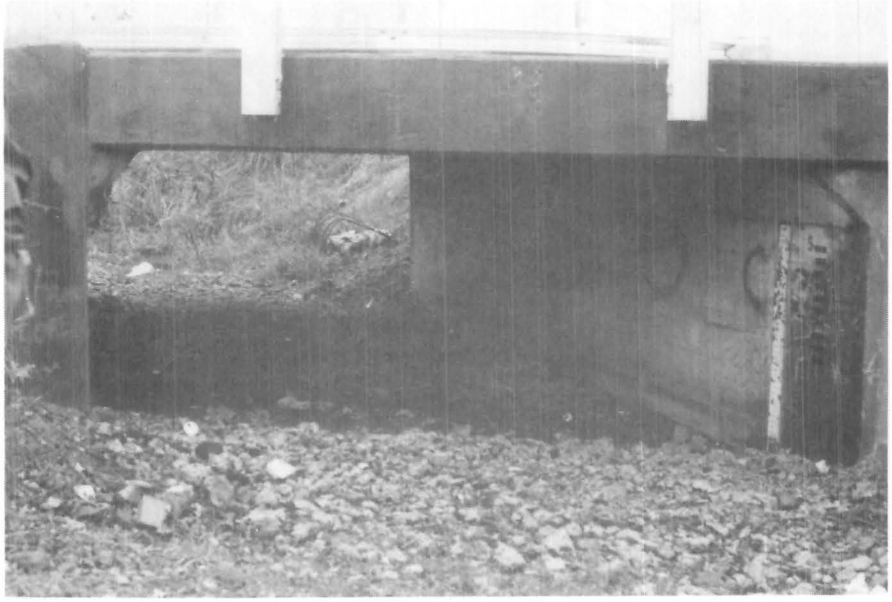

Figure 9 – San Martin Creek at Colombet Avenue
(Looking Downstream)

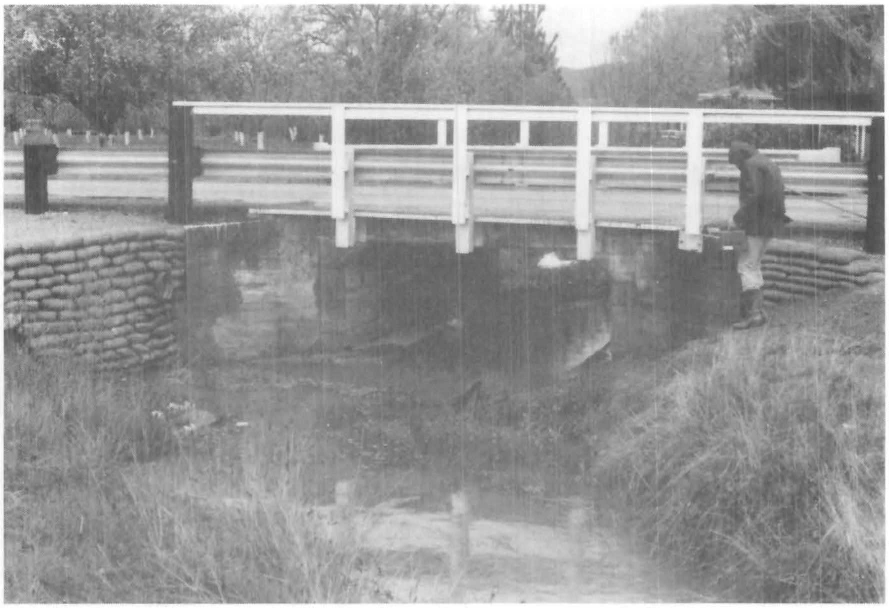

Figure 10 – San Martin Creek at Center Avenue
(Looking Downstream)

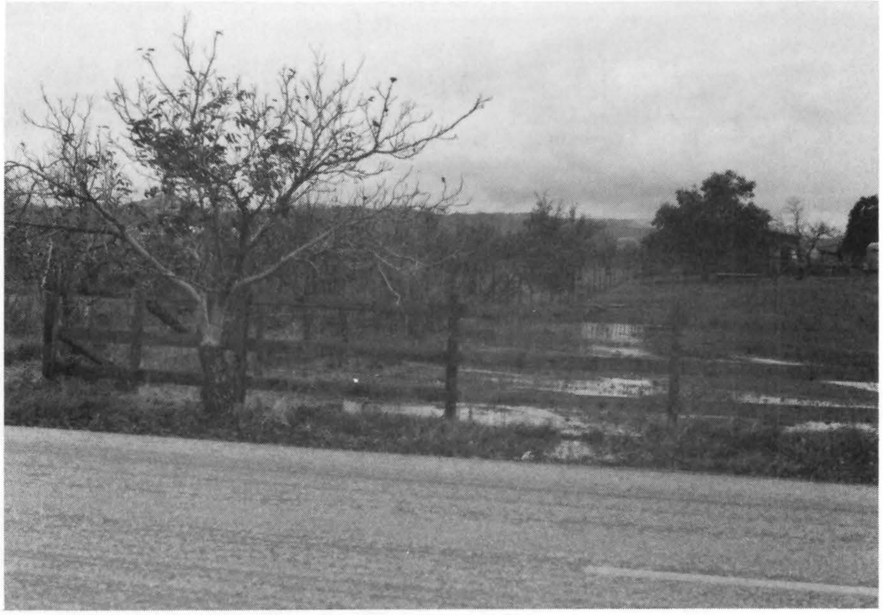

Figure 11 – San Martin Creek at Foothill Avenue
(Looking Downstream)

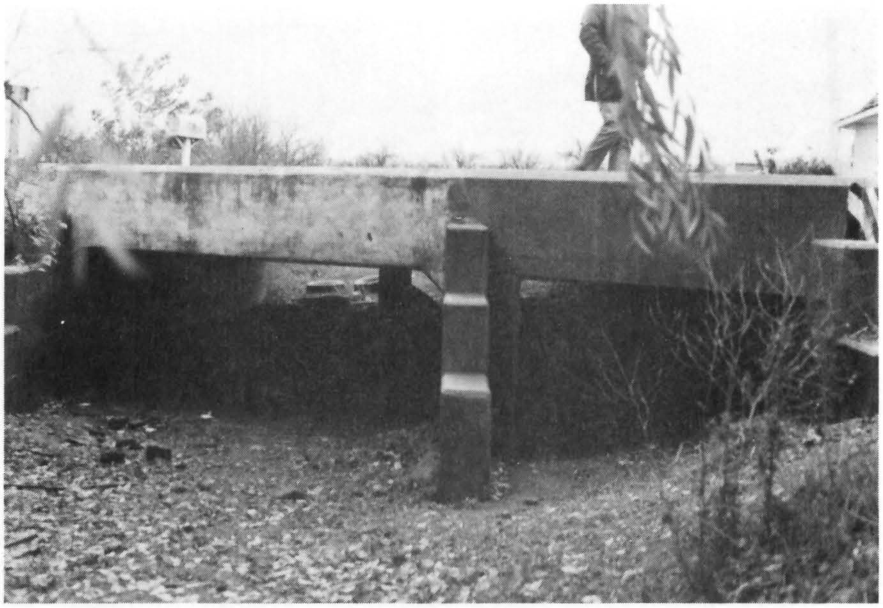

Figure 12 – Corralitos Creek at Colombet Avenue
(Looking Downstream)

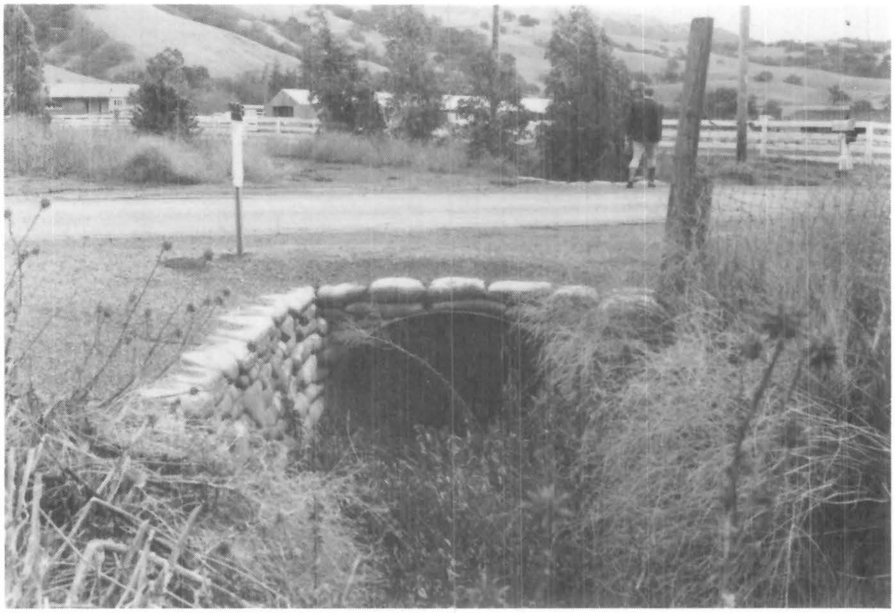

Figure 13 – Foothill Creek at Foothill Avenue
(Looking Upstream)

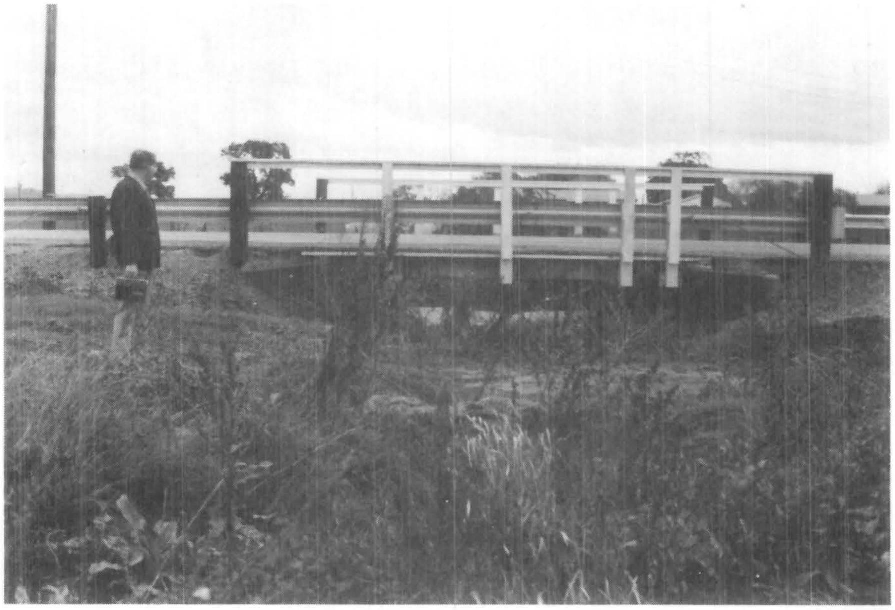

Figure 14 – Tennant Creek at Tennant Avenue
(Looking Downstream)

operated primarily for water supply and operation for flood control is incidental. However, ongoing inter-agency studies in the basin, including raising Chesbro Dam or constructing a supplementary water supply reservoir in Hayes Valley, could lead to substantially reduced peak flows in the Llagas Creek portion of the study area sometime in the future.

Other Factors and Their impacts

Flood warning and forecasting – No specific river or flood forecasts are issued for the study area by the Federal-State River Forecast Center in Sacramento. However, forecasts of heavy rain are provided to Santa Clara County by the NOAA, National Weather Service Forecast Office in San Francisco. General weather forecasts of intense rainfall with accompanying flood warnings are issued and are available by telephone, newspapers, radio and television.

Flood-fighting and emergency evacuation plans – The Santa Clara Valley Water District maintains an Emergency Operations Center. The Center consists of the Chief of Emergency Operations aided by a Public Information Officer, and Emergency Coordinator and other related support staff. Four additional units, Data Collection, Flood Information, Water Operations, and Emergency Actions complete the organization.

The Emergency Operations Center is maintained in an "Alert" status from 1 October to 1 May each year. When the apparent situation requires 24-hour vigilance, the Center goes into a "Pre-Emergency" status. As the gravity of the situation increases and flooding is occurring and threatens to increase, the Center goes into a full "Emergency" status. Upon termination of emergency conditions, the Center reverts to the "Alert" status until the situation again changes or the flood season terminates.

Within the Emergency Operations Center, the Data Collection and Flood Information Units primarily collect, organize, coordinate and publish information relating to the flood situation, flooding and flood damage. The Water Operation Unit operates the water system (reservoirs, pipelines, canals, etc.) in order to minimize flooding and flood damage. The Emergency Actions Unit with available crew does all emergency maintenance within its capabilities and supervises and coordinates the work of others. Requests for Federal and/or State aid are initiated, coordinated and supervised through the Emergency Operations Center.

Material storage on the flood plain – There are no significant amounts of floatable material stored in the flood plains of the study area. During floods normal amounts of floatable materials, generally found in residential as well as rural areas, would be washed downstream. A number of the private bridges spanning the creeks of the study area appear susceptible to destruction and floatation by floodwaters. All of the materials that may be carried downstream by floodwaters could damage downstream structures or accumulate at bridges or culverts and increase the flood problem.

PAST FLOODS

SUMMARY OF HISTORICAL FLOODS

In the Llagas Creek Basin, floods that have caused significant damage or inconvenience occurred in 1908-09, 1909-10, 1913-14, 1915-16, 1916-17, 1936-37, 1937-38, 1939-40, 1940-41, 1951-52, 1955, 1958, 1962, 1967 and 1969. This report will concentrate on floods occurring since the construction of Chesbro Dam in 1955 because of its effect of reducing potential flood levels.

Flood Records

Information on historical floods in the basin and study area was obtained from published reports, newspaper files, aerial photographs and historical records as previously described. Records of the Llagas Creek near Morgan Hill stream gage and the Morgan Hill-SCS precipitation gage were evaluated to determine their relationship with past flooding in the study area.

Flood Descriptions

During the major flood in December of 1955, which caused severe damage and loss of life throughout Santa Clara Valley, little information was published on flood damages in the study area of Llagas Creek Unit I. The maximum 24-hour rainfall recorded at the Morgan Hill-SCS precipitation gage during this period was 6.26 inches. It is known that Monterey Highway was closed for over a day between Morgan Hill and the south county line which caused some local inconvenience. The completion of Chesbro Dam in 1955 probably significantly reduced the flooding effect along Llagas Creek downstream to Monterey Highway as relatively little flow was recorded at the stream gage below the dam.

The flood in January of 1952, prior to construction of Chesbro Dam, caused considerable waterlogging of orchard lands along Llagas Creek between the present Santa Teresa Boulevard and Monterey Highway. This condition was described to have existed because floodwaters were backed up from some point downstream. The newspapers reported some road flooding. The maximum 24-hour rainfall at the Morgan Hill-SCS gage during this period was 3.06 inches.

In January of 1967 floodwater overtopped Watsonville Road at Monterey Highway by about 2 feet according to a local observer. On the east side of the study area, roadway flooding occurred on several of the creeks and debris clogged many of the culverts. Foothill Road overtopped between Tennant and Maple Avenues. The total rainfall during the 90-hour storm was about 7 inches on the valley floor near Morgan Hill.

The flood in February of 1969 caused considerable ponding in the lower portions of the east side watersheds. Aerial photographs taken during the latter stages of this flooding dramatize the flood characteristics of this area and are shown in Figures 15 through 18. The maximum 24-hour rainfall recorded at the Morgan Hill-SCS gage during this period was 5.70 inches.

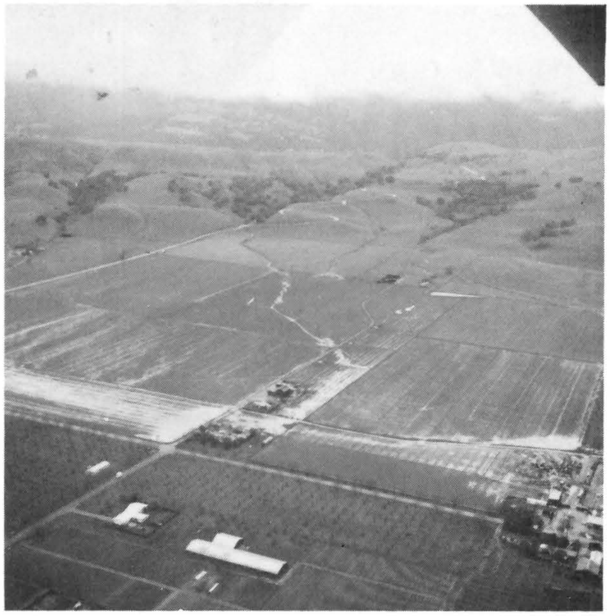

Figure 15 – Tennant Creek Flooding at Hill Road and San Pedro Avenue – 24 Feb. 1969
(Looking Southeasterly)

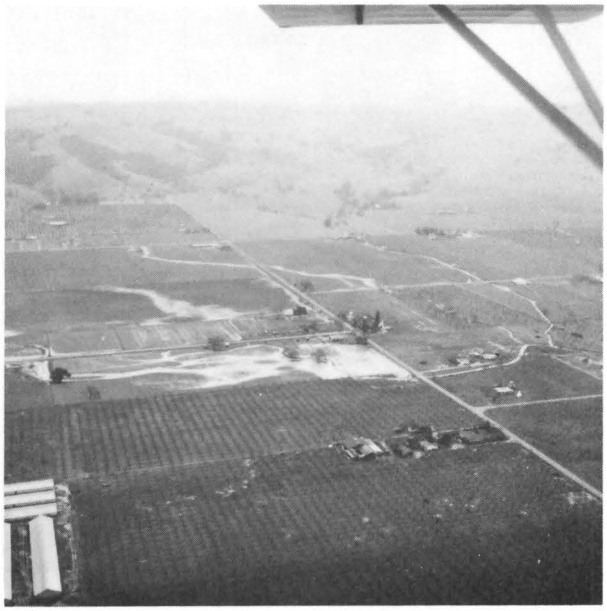

Figure 16 – Tennant Creek Flooding at Maple Avenue and Hill Road – 24 Feb. 1969
(Looking Easterly)

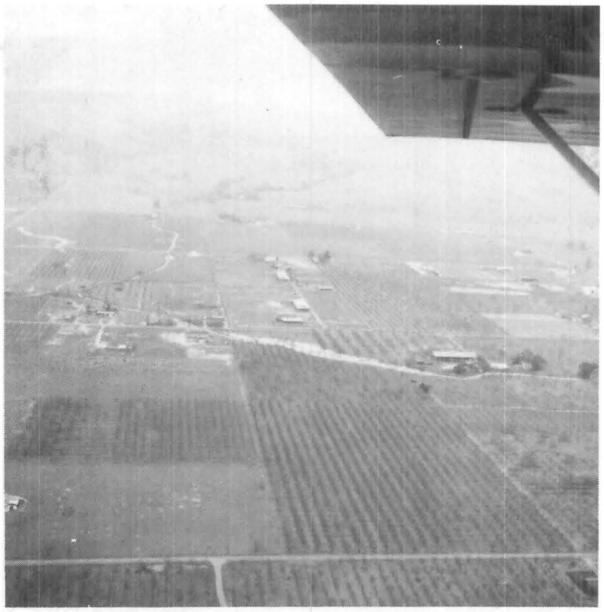

Figure 17 — Corralitos Creek Flooding at Colombet Avenue — 24 Feb. 1969
(Looking Northeasterly)

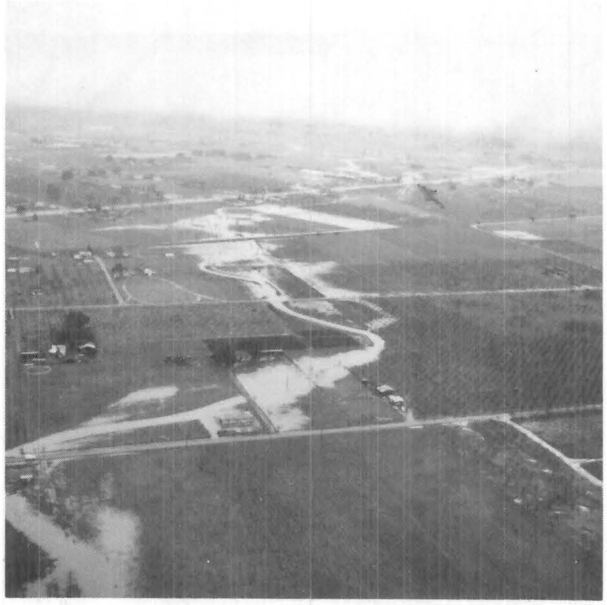

Figure 18 — Little Llagas Creek, Looking Northwesterly toward Monterey Highway
(Background)

FUTURE FLOODS

Future floods could have magnitudes equal to or larger than those of past floods. Larger floods have been experienced in the past on streams with geographic and physiographic characteristics similar to those of the study area streams. Similar combinations of rainfall and runoff which caused these floods could occur in the Llagas Creek Unit I study area. Therefore, to determine the flooding potential of the study area, it was necessary to consider storms and floods that have occurred in regions of like topography, watershed cover and physical characteristics. Discussion of the future floods in this report is limited to those that have been designated as the Intermediate Regional Flood and the Standard Project Flood. The Standard Project Flood represents a reasonable upper limit of expected flooding in the study area. The Intermediate Regional Flood may reasonably be expected to occur more frequently although it will not be as severe as the infrequent Standard Project Flood.

Intermediate Regional Flood (IRF)

The Intermediate Regional Flood is defined as one whose peak flow magnitude has a one percent chance of being equaled or exceeded in any year. The peak flow of this flood was developed from statistical analyses of available streamflow and precipitation records and runoff characteristics for each watershed in the study area. Unit hydrographs were developed and applied to each watershed. The resulting flows were then routed downstream according to generally accepted methods.

Peak flows thus developed for the Intermediate Regional Flood at selected locations in the study area are shown in Table 3.

Standard Project Flood (SPF)

The Standard Project Flood is defined as a major flood that can be expected to occur from the most severe combination of meteorological and hydrological conditions that are considered reasonably characteristic of the geographical region in which the study area is located, excluding extremely rare combinations. The Corps of Engineers, in cooperation with the NOAA Weather Service, has made comprehensive studies and investigations based on past records of experienced storms and floods and has developed generalized procedures for estimating the flood potential of streams. For this study area, the Standard Project Floods were developed from the rainfall distribution patterns of the storms of 21 – 24 December 1955 and 11 – 14 October 1962 which were applied to each watershed.

Peak discharges for the Standard Project Flood at selected locations in the study area are shown in Table 3. The relative water surface elevations for the Intermediate Regional Flood and the Standard Project Flood are shown on the channel profiles of Plates 30 through 41.

Due to their unique flood characteristics, the watersheds in the study area were analyzed at major control points to determine possible locations of watershed overflows. At such control points a stage-discharge rating table was prepared for culverts, tops of roads and natural topographic divides to estimate the components of peak Intermediate Regional Flood and Standard Project Flood flow remaining in and escaping from that watershed. These critical locations and their estimated watershed overflows are shown on Plates 2 through 29. The resulting peak flows for both floods after taking into account watershed overflows are shown at selected locations in each watershed in Table 3.

The recorded discharge at the Llagas Creek near Morgan Hill stream gage on April 2, 1958, was 3,190 cfs. Table 4 shows a comparison of the water surface elevations for the Standard Project Flood, the Intermediate Regional Flood and the discharge on April 2, 1958, at this stream gage.

TABLE 3
PEAK FLOWS FOR INTERMEDIATE REGIONAL FLOOD (IRF) AND STANDARD PROJECT FLOOD (SPF)

Location	River Mile	Drainage Area sq.mi.	IRF Discharge cfs		SPF Discharge cfs	
			In-Channel	Overflow *	In-Channel	Overflow *
Llagas Creek						
Chesbro Dam	19.6	19.3	4,700		5,300	
Monterey Highway	13.8	27.9	5,600		6,300	
S.P.T. C. Bridge	13.7	27.9	5,600		6,300	
Edmundson (Little Llagas) Creek						
Edmundson Avenue						
South Branch	6.6	0.4	140		220	
North Branch	6.6	0.4	30	90	30	150
U/S of Junction with West Little Llagas Creek	5.5	1.3	330		480	
Monterey Highway	5.2	5.6	200	1,200	200	1,700
Church Creek						
Junction with Little Llagas Creek	0.0	1.8	100	350	100	480
San Martin Creek						
Foothill Avenue	1.7	1.4	360		470	
D/S of Junction with Center Creek	0.9	2.4	640		860	
D/S of Junction with New Creek	0.5	3.7	1,010		1,300	
Llagas Creek	0.0	4.2	1,130		1,460	
New Creek						
Junction with San Martin Creek	0.0	1.0	260		340	
Center Creek						
Junction with San Martin Creek	0.0	0.7	200		300	
Corralitos Creek						
U/S of Junction with Tennant Creek	1.4	4.6	370		480	
Colombet Avenue	1.3	4.6	1,080	100	1,420	200
Tennant Creek						
Dunne Avenue	2.1	0.7	50	130	60	170
Tennant Avenue	1.0	1.9	420	10	570	40
D/S of Junction with Foothill Creek	0.6	2.5	610		840	
D/S of Junction with Maple Creek	0.0	3.3	790		1,120	
Maple Creek						
Maple Avenue	0.4	0.5	60	90	60	160
Junction with Tennant Creek	0.0	0.5	40		40	
Foothill Creek						
Junction with Tennant Creek	0.0	0.6	160		220	

* Permanent loss to original watercourse

TABLE 4
RELATIVE FLOOD ELEVATIONS AT LLAGAS CREEK STREAM GAGE

Flood	Water Surface Elevation [1]
Standard Project Flood	447.8
Intermediate Regional Flood	447.4
April 2, 1958	442.4

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[1] Feet, mean sea level datum

Frequency

A frequency curve of peak flows was constructed for each watershed studied on the basis of available information and computed flows of floods up to the magnitude of the Standard Project Flood. The frequency curves thus derived, which are available on request, reflect the judgment of engineers who have studied the area and are familiar with the region; however, they must be regarded as approximate and should be used with caution in connection with any planning of flood plain use. Floods larger than the Standard Project Flood are possible but the combination of factors necessary to produce such large flows would be extremely rare.

Hazards of Large Floods

The extent of damage caused by any large flood depends on the depth and duration of flooding, velocity of flow, and rate of rise. An Intermediate Regional or Standard Project Flood in the Llagas Creek Unit I study area would result in inundation of agricultural, residential and commercial properties throughout the area.

The hazards from great floods cannot be entirely expressed as tangibles. Although relationships, such as depth and velocity of flow, rate of rise and duration of flooding are a measure of the hazard, other less tangible factors must be considered. The amount and extent of damage caused by any flood depends also on the topography of the area flooded and development in the flood plain. Deep floodwater flowing at high velocity and carrying floating debris would create conditions hazardous to persons or vehicles attempting to cross flooded areas. Hazardous flood conditions are relative to the size of the persons or objects experiencing the hazard. When potential loss of life is a factor, velocity of flow greater than two and a half feet per second, combined with depths of flow of one foot or more, must be considered hazardous; and if small children are involved, these figures may be excessive.

Structural hazard generally begins when floodwaters first enter the structure or when the situation changes from nuisance to serious. Rapidly rising and swiftly flowing floodwater may trap persons in homes that are ultimately destroyed or in vehicles that are ultimately submerged. Waterlines can be ruptured by deposits of debris and the force of floodwaters, creating the possibility of contaminated domestic water supplies. Ruptured oil pipelines could result in contamination of flood plain areas by deposition of petroleum products. Decaying flood-deposited garbage or other organic materials could create hazards in terms of medical, fire, or law enforcement emergencies.

Flooded areas and flood damages – The areas that would be flooded by the Standard Project Flood are shown on Plate 2, which is also an index map to Plates 3 through 29. The actual limits of these overflow areas may vary somewhat from those shown on the maps because the contour interval and scale of the maps do not permit precise plotting of the flooded area boundaries. The areas that would be flooded by the Intermediate Regional and Standard Project Floods include commercial and residential sections and the associated streets, roads and private and/or public utilities in the areas. Considerable damage to these facilities would occur during an Intermediate Regional Flood. Due to the wider extent, greater depths of flooding, higher velocity flow and longer duration of flooding during a Standard Project Flood, damage would be even more severe than during an Intermediate Regional Flood.

Plates 30 through 41 show water surface profiles of the Intermediate Regional and Standard Project Floods. Depth of flow in the channel can be estimated from these illustrations. Typical cross sections of the flood plain at selected locations, together with the water surface elevation and lateral extent of the Intermediate Regional and Standard Project Floods are shown on Plates 42 through 44.

Obstructions – During floods, debris collecting on bridges and culverts could decrease their carrying capacity and cause greater water depths upstream of these structures (backwater effect). Since the occurrence and amount of debris are indeterminate factors, only the physical characteristics of the structures were considered in preparing profiles of the Intermediate Regional and Standard Project Floods. Similarly, the maps of flooded areas show the backwater effect of obstructive bridges and culverts, but do not reflect increased water surface elevation that could be caused by debris collecting against the structures, or by deposition of silt in the stream channel under the structures. Most of the bridges and culverts crossing the streams in the study area would be obstructive to the Intermediate Regional Flood and even more obstructive to the Standard Project Flood. Some bridges high enough so as not to be inundated by floodflows have approaches low enough to be rendered impassable by flooding.

Table 5 lists the underclearance and water surface elevations for the Intermediate Regional and the Standard Project Floods immediately upstream of selected bridges and culverts in the study area. Further information on bridges and relative water surface elevations is shown on the channel profiles on Plates 30 through 41.

Velocities of flow — Water velocities during floods depend largely on the size and shape of the waterway cross section, stream conditons, and the bed slope, all of which vary on different streams and at different locations on the same stream. During an Intermediate Regional Flood, velocities of main channel flow in the upper reaches of the streams in the study area would be 4 to 17 feet per second. Water flowing at this rate is capable of causing severe erosion to streambanks and fills around bridge abutments as well as transporting large objects. In the lower reaches, the velocities would be a bit lower, averaging 4 to 14 feet per second. It is expected that velocity of flow during a Standard Project Flood would be slightly higher than during an Intermediate Regional Flood. Overbank flow velocities for all the streams would average 1 to 4 feet per second at a depth of from 0.5 to 3 feet. Water flowing any slower than about 3 feet per second would deposit any debris or silt it might be carrying.

TABLE 5
SELECTED BRIDGE ELEVATION DATA

Location	River Mile	Under Clearance Elevation [1]	Water Surface Elevation [1]	
			IRF	SPF
LLagas Creek				
Monterey Highway	13.8	305.0	302.6	303.5
Old Watsonville Road	16.2	357.1	360.7	361.3
Sycamore Avenue	16.7	371.1	376.2	376.8
Edmundson Avenue	17.7	406.0	403.5	404.1
Llagas Avenue	19.3	437.5	445.0	445.4
Edmundson (Little Llagas) Creek				
Watsonville Road	5.2	316.1	318.2	318.7
Edmundson Avenue	6.7	356.0	353.0	353.7
Church Creek				
Colombet Avenue	0.2	249.4	250.6	250.7
Center Avenue	0.6	271.8	269.8	270.4
San Martin Creek				
Colombet Avenue	0.3	268.4	270.9	271.3
Center Avenue	1.0	287.2	288.2	288.5
San Martin Avenue	1.3	298.9	298.9	299.0
New Creek				
New Avenue	1.4	351.2	351.3	352.1
Center Creek				
Foothill Avenue	0.3	309.2	310.4	310.6
Corralitos Creek				
Colombet Avenue	1.3	314.4	317.0	317.1
Center Avenue	1.7	330.6	329.0	329.6
Tennant Creek				
Maple Avenue	0.1	319.8	322.1	322.3
Hill Road	0.5	325.3	326.9	327.1
Tennant Avenue	1.0	336.4	336.8	338.7
Maple Creek				
Center Avenue	0.2	331.7	331.8	331.9
Maple Avenue	0.4	340.0	339.9	340.0
Foothill Creek				
Foothill Avenue	0.5	363.1	364.6	364.7

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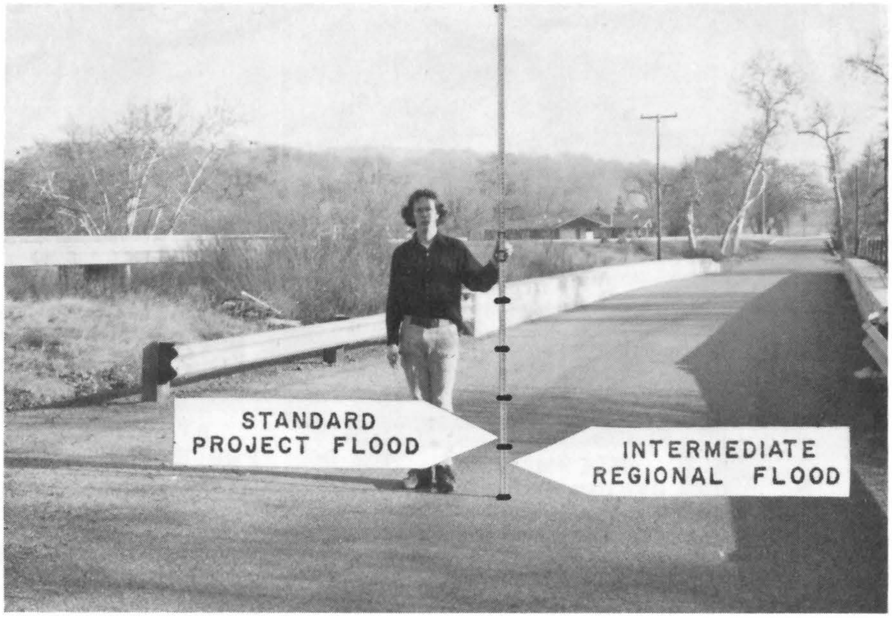
[1] Feet, mean sea level datum

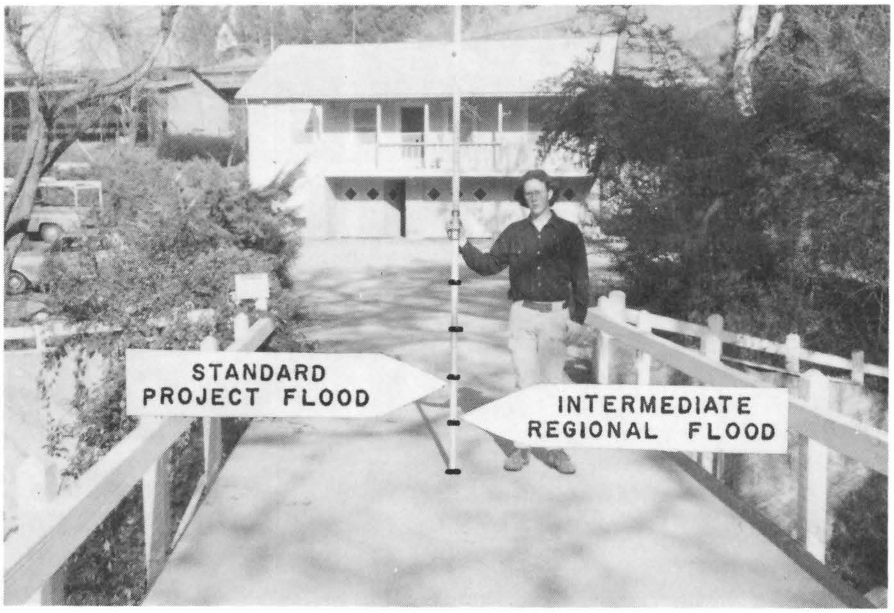
Rates of rise and duration of flooding – Intense rainfalls that accompany severe storm fronts usually produce the floods occurring in the Llagas Creek Unit I Study Area. A time lag of from 0 to 4 hours exists before overbank flooding occurs in the downstream areas. Floods generally rise rapidly and stay out of banks for short periods of time. For the Intermediate Regional and Standard Project Floods at the Llagas Creek stream gage about 500 feet upstream of Llagas Avenue, Table 6 gives the maximum rate of rise, height of rise from initial flood stage to maximum flood stage, time of rise for the period corresponding to height of rise, and duration of flood stage above initial flood stage.

TABLE 6
FLOOD RISE AND DURATION AT LLAGAS CREEK STREAM GAGE

Flood	Maximum Rate of Rise ft./hr.	Rise Above Flood Stage: Height ft.	Rise Above Flood Stage: Time to Rise hr.	Duration of Flood Stage Hr.
Intermediate Regional Flood	0.5	3.4	7.5	20.5
Standard Project Flood	0.4	3.8	23.0	41.0

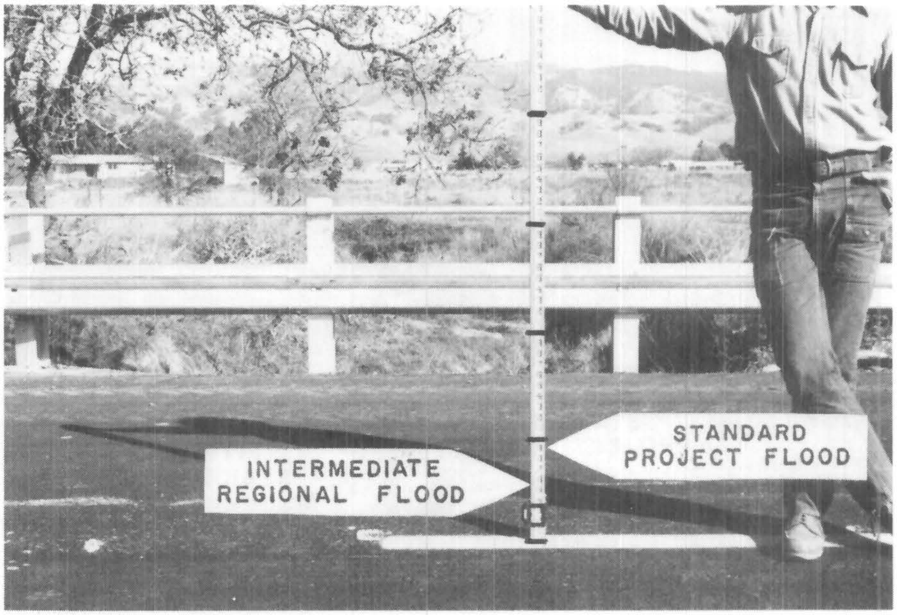


A. Llagas Creek at Old Watsonville Road

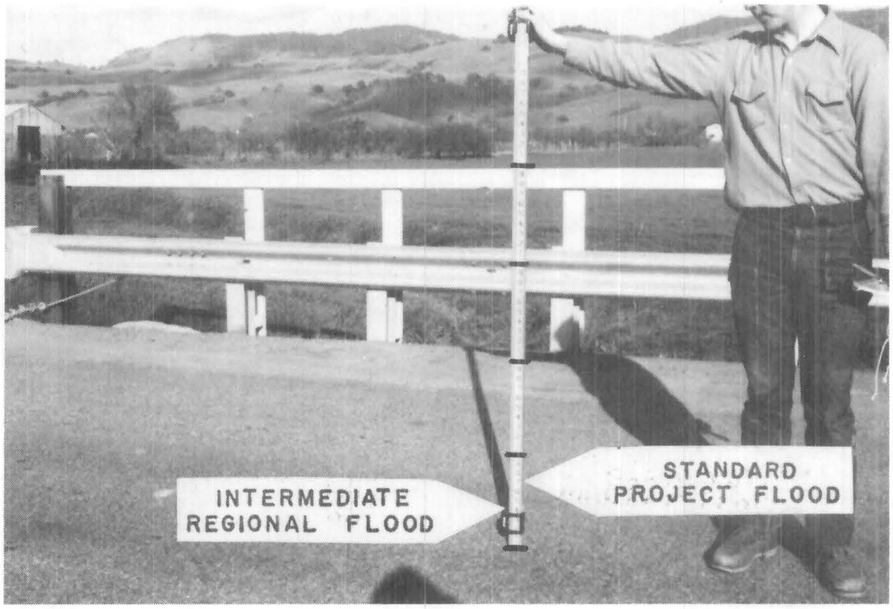


B. Llagas Creek at Old Gifford Ranch Bridge

Figure 19 – Intermediate Regional Flood (IRF) and Standard Project Flood (SPF) Levels at Selected Locations on Llagas Creek

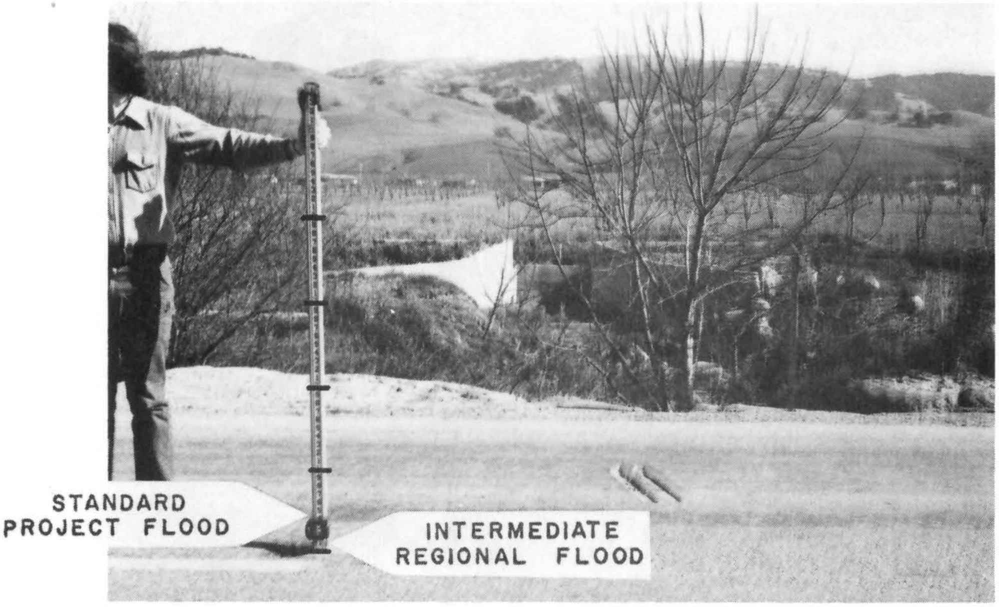


A. San Martin Creek at Colombet Avenue
(Looking Upstream)

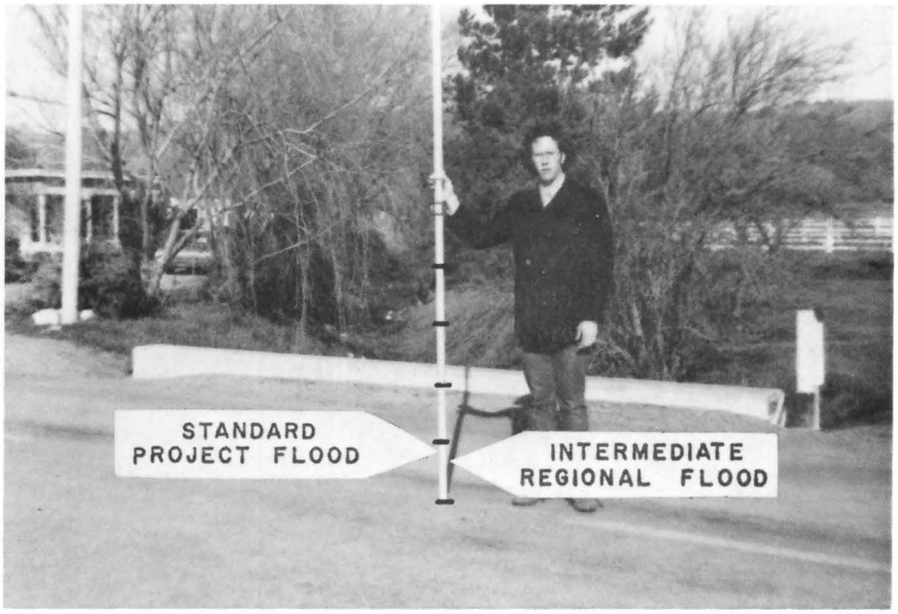


B. San Martin Creek at Center Avenue
(Looking Upstream)

Figure 20 – Intermediate Regional Flood (IRF) and Standard Project Flood (SPF) Levels at Selected Locations on San Martin Creek

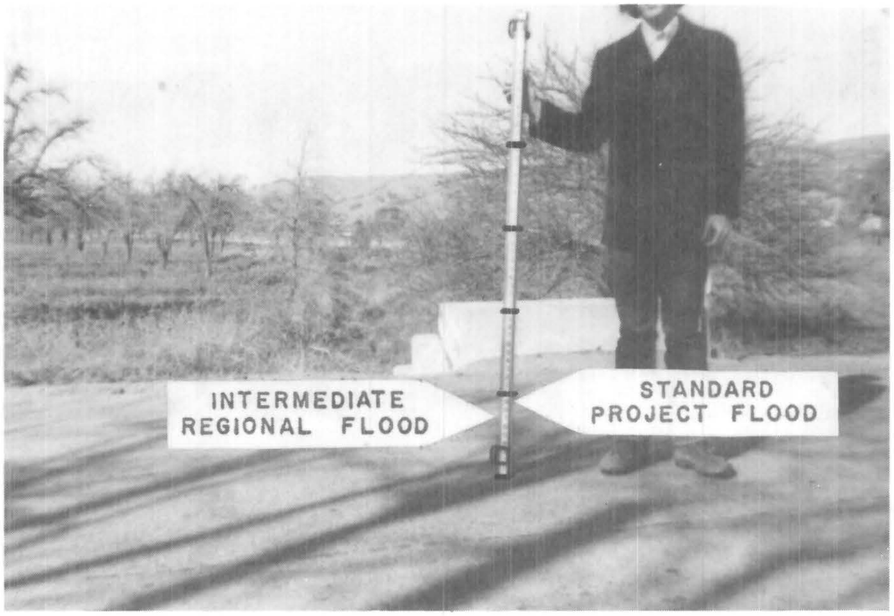


A. Center Creek at Foothill Avenue
(Looking Upstream)

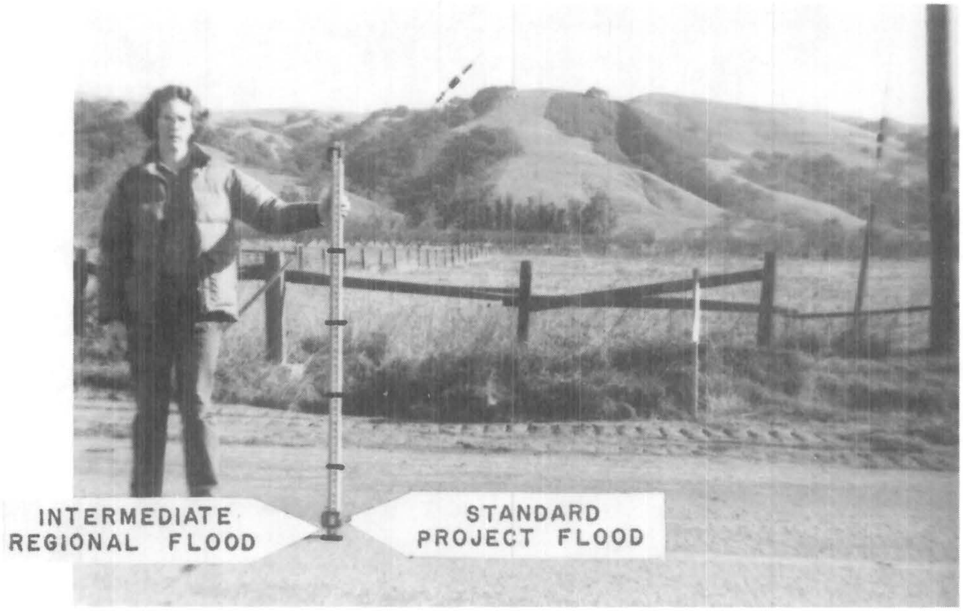


B. Corralitos Creek at Colombet Avenue
(Looking Upstream)

Figure 21 —Intermediate Regional Flood (IRF) and Standard Project Flood (SPF) Levels at Selected Locations on Center and Corralitos Creeks



A. Tennant Creek at Maple Avenue
(Looking Upstream)



B. Maple Creek at Foothill Avenue
(Looking Upstream)

Figure 22 – Intermediate Regional Flood (IRF) and Standard Project Flood (SPF) Levels at Selected Locations on Tennant and Maple Creeks

GLOSSARY

Flood. The general and temporary condition of partial and complete inundation of normally dry land areas from the overflow of stream, river, or other inland waterways. Flooding may also result from tidal surges, abnormally high tidal water, tsunamis or rising coastal waters that result from hurricanes or other severe storms.

Flood Crest. The maximum stage or elevation reached by the waters of a flood at a given location.

Flood Peak. The maximum instantaneous discharge rate of a flood at a given location. It usually occurs at or near the time of maximum stage or crest.

Flood Plain. The relatively flat area or low land adjoining the channel of a river, stream, watercourse, ocean, lake or other body of standing water, which has been or may be covered by floodwater.

Flood Profile. A graph showing the relationship of water surface elevation to location, the latter generally expressed as the distance upstream from the mouth for a stream of water flowing in an open channel. It is generally drawn to show surface elevation for the crest of a specific flood, but may be prepared for conditions at a given time or stage.

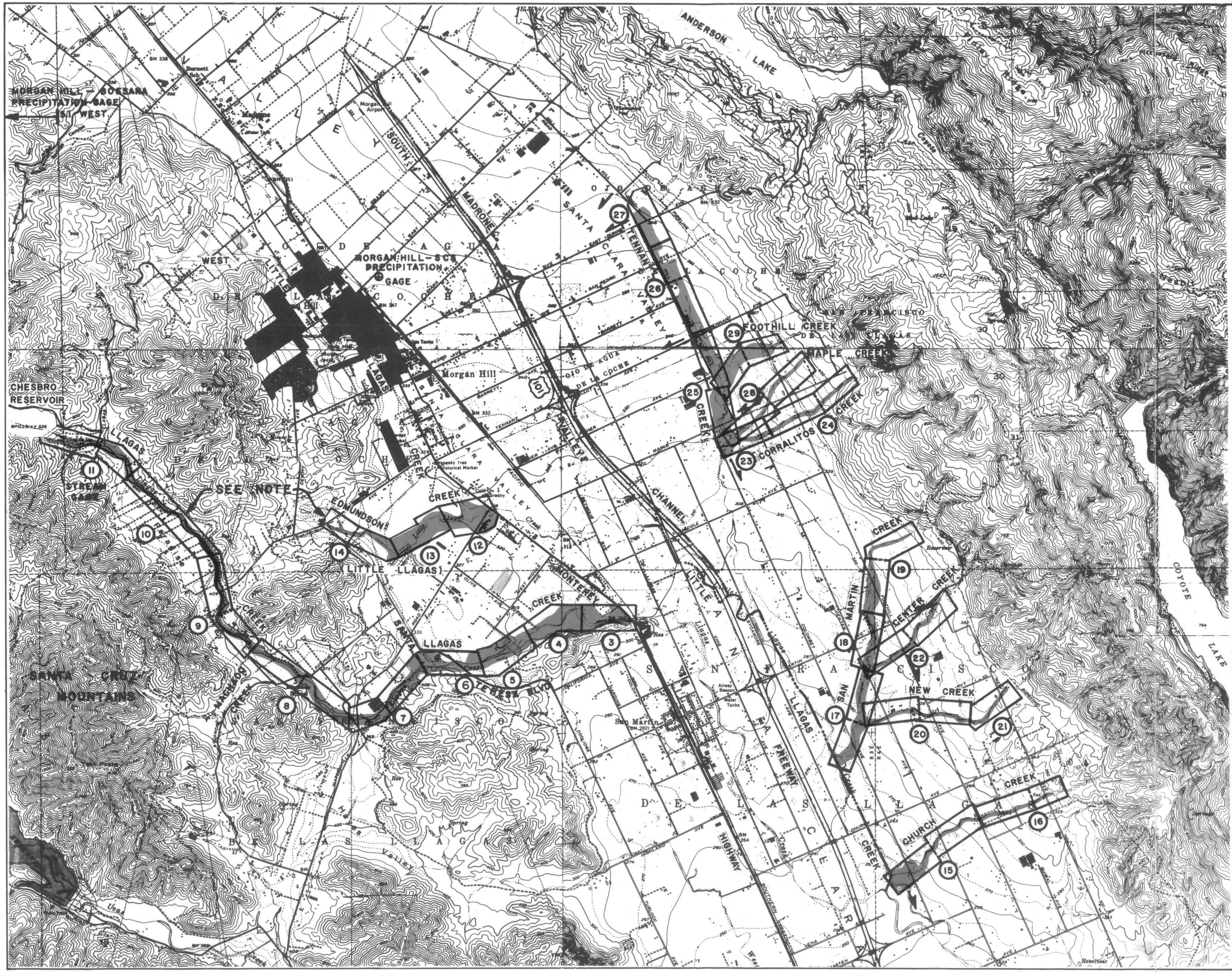
Flood Stage. The stage of elevation at which overflow of the natural banks of a stream or body of water begins in the reach or area under consideration.

Intermediate Regional Flood (IRF) A flood whose peak flow magnitude has about a one percent chance of being equalled or exceeded in any year. It is based on statistical analyses of stream flow records available for the watershed and analyses of rainfall and runoff characteristics in the general region of the watershed. The IRF would have an average frequency of occurrence of about once in 100 years.

Standard Project Flood. The flood that may be expected from the most severe combination of meteorological and hydrological conditions that are considered reasonably characteristic of the geographical region in which the drainage basin is located, excluding extremely rare combinations. Such floods, as used by the Corps of Engineers, are intended as practicable expressions of the degree of protection that should be sought in the design of flood control works, the failure of which might be disastrous.

Right or Left Bank. The bank on the right or left side of a river, stream, or watercourse looking downstream.

Underclearance Elevation. The elevation at the top of the opening of a culvert, or other structure through which water may flow along a watercourse.



LEGEND

▬ FLOODED AREA

⑨ PLATE NUMBER

↙ WATERSHED OVERFLOW

NOTE:

1. PLATES ③ THROUGH ⑭ ARE ORIENTED SO THAT NORTH IS TOWARD THE BOTTOM OF THE PLATE. THIS WAS DONE SO THAT STREAM FLOWS SHOWN ON THE PLATES ARE FROM RIGHT TO LEFT.
2. EXTENT OF FLOODING OUTSIDE OF STUDY LIMITS NOT INCLUDED IN THIS REPORT.

4000 2000 0 4000

SCALE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

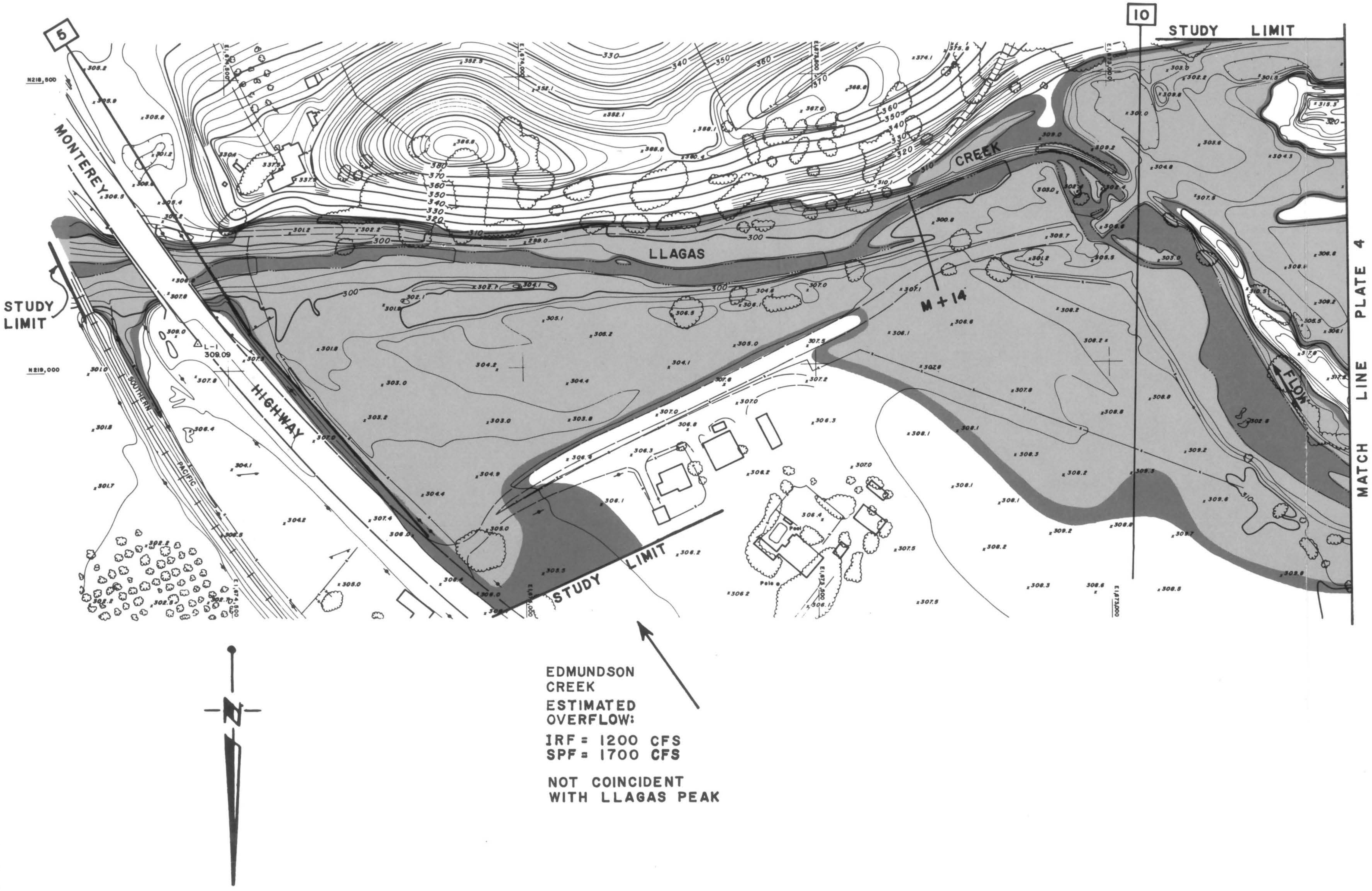
FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

INDEX MAP — FLOODED AREA

JULY 1975



EDMUNDSON CREEK
ESTIMATED OVERFLOW:
IRF = 1200 CFS
SPF = 1700 CFS

NOT COINCIDENT WITH LLAGAS PEAK

LEGEND

OVERFLOW LIMITS

▨ INTERMEDIATE REGIONAL FLOOD } STANDARD PROJECT FLOOD

M+4 MILES ABOVE MOUTH

22 CROSS SECTION

—260— GROUND ELEVATION IN FEET SEA LEVEL DATUM

▨ CHANNEL

EXTENT OF FLOODING OUTSIDE OF STUDY LIMITS NOT INCLUDED IN THIS REPORT.

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

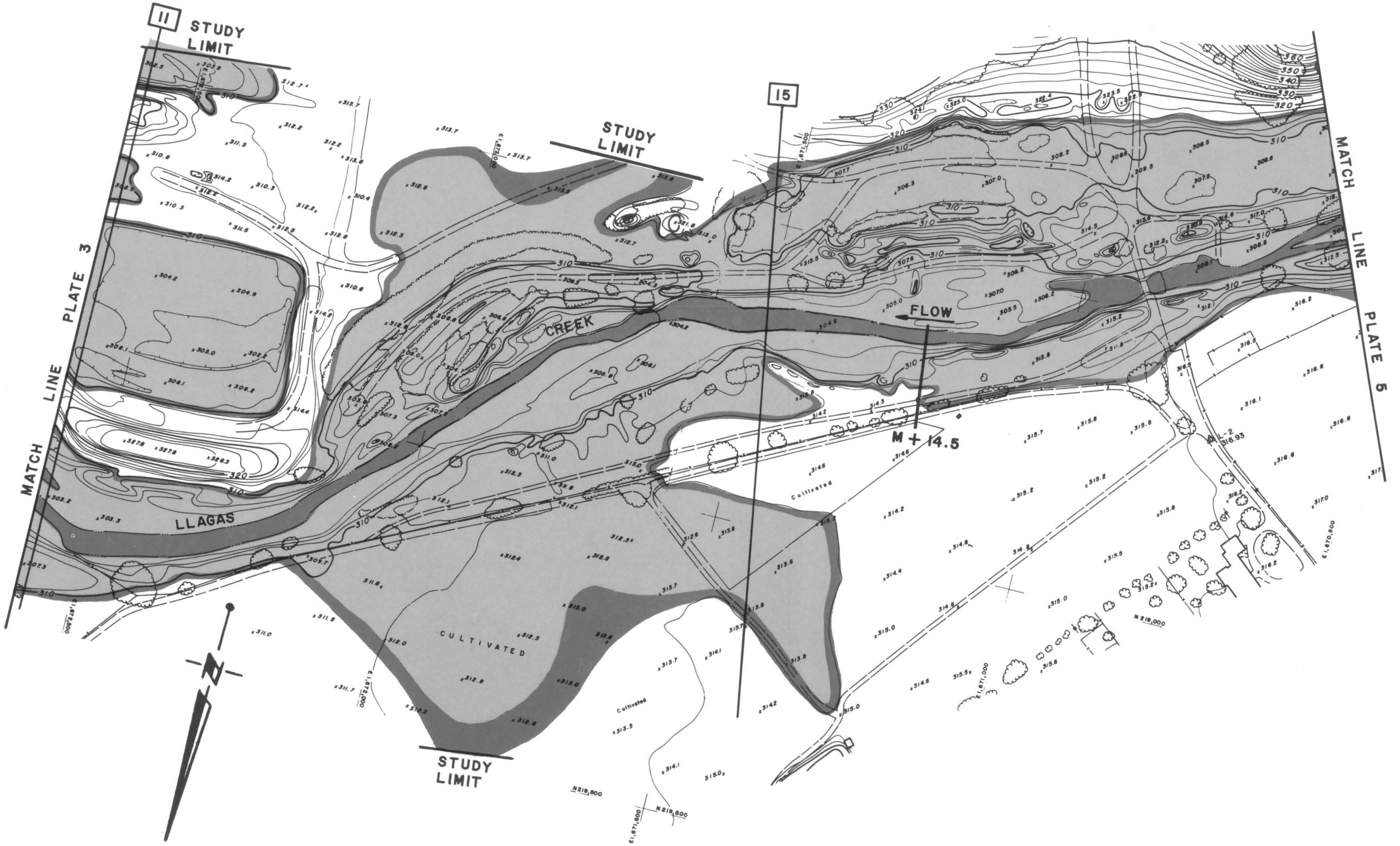
200 100 0 200
SCALE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA
FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
LLAGAS CREEK STA. 0 — 25
JULY 1975



LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH	
22	CROSS SECTION	
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM	
▨	CHANNEL	

EXTENT OF FLOODING OUTSIDE OF STUDY LIMITS NOT INCLUDED IN THIS REPORT.

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200

SCALE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

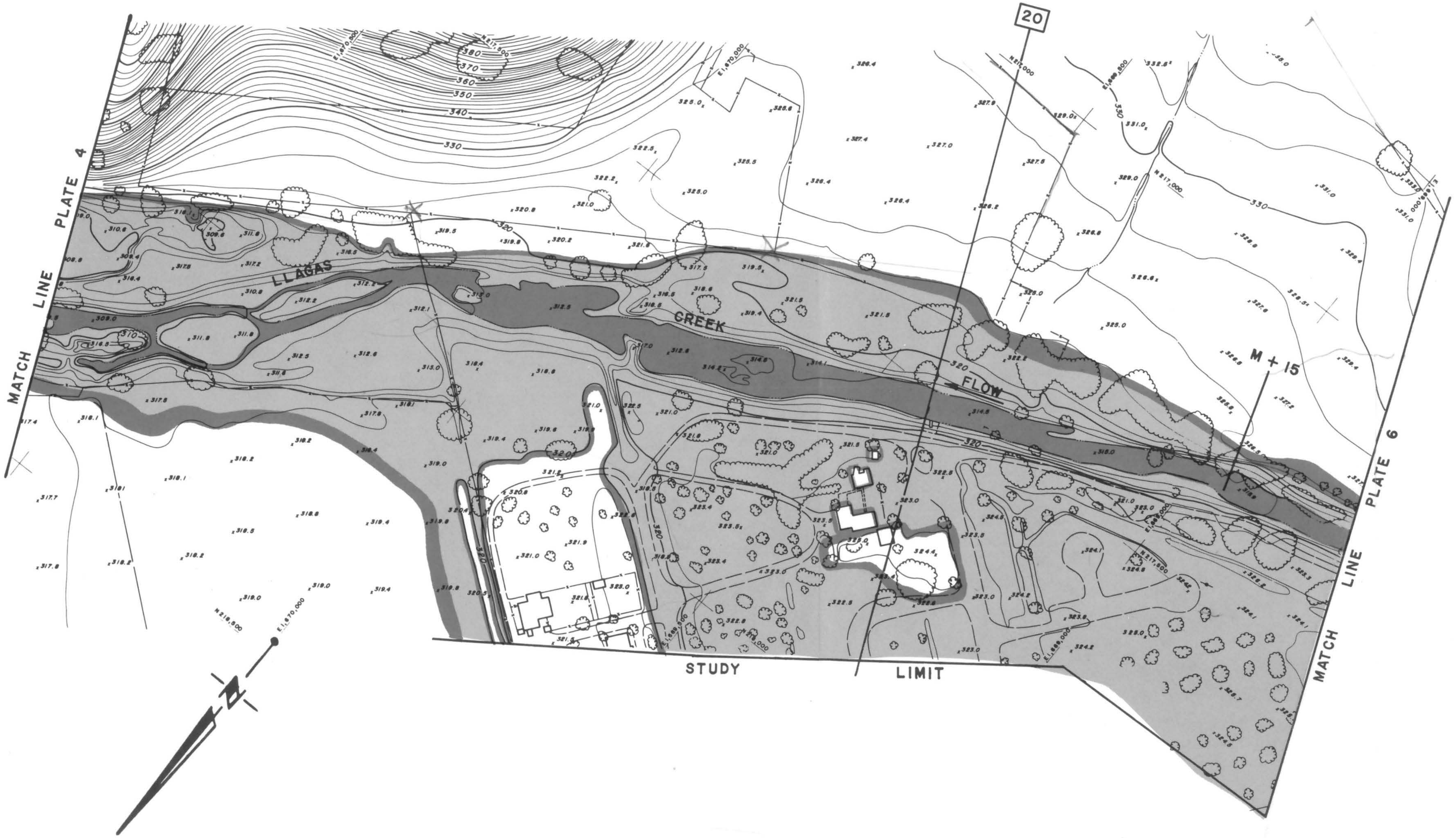
FLOODED AREAS

LLAGAS CREEK STA. 25 — 48
JULY 1975

PLATE 4

340
517
23.

#216



LEGEND

OVERFLOW LIMITS

▨ INTERMEDIATE REGIONAL FLOOD } STANDARD PROJECT FLOOD

M+4 MILES ABOVE MOUTH

22 CROSS SECTION

—260— GROUND ELEVATION IN FEET SEA LEVEL DATUM

▨ } CHANNEL

EXTENT OF FLOODING OUTSIDE OF STUDY LIMITS NOT INCLUDED IN THIS REPORT.

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200
SCALE IN FEET

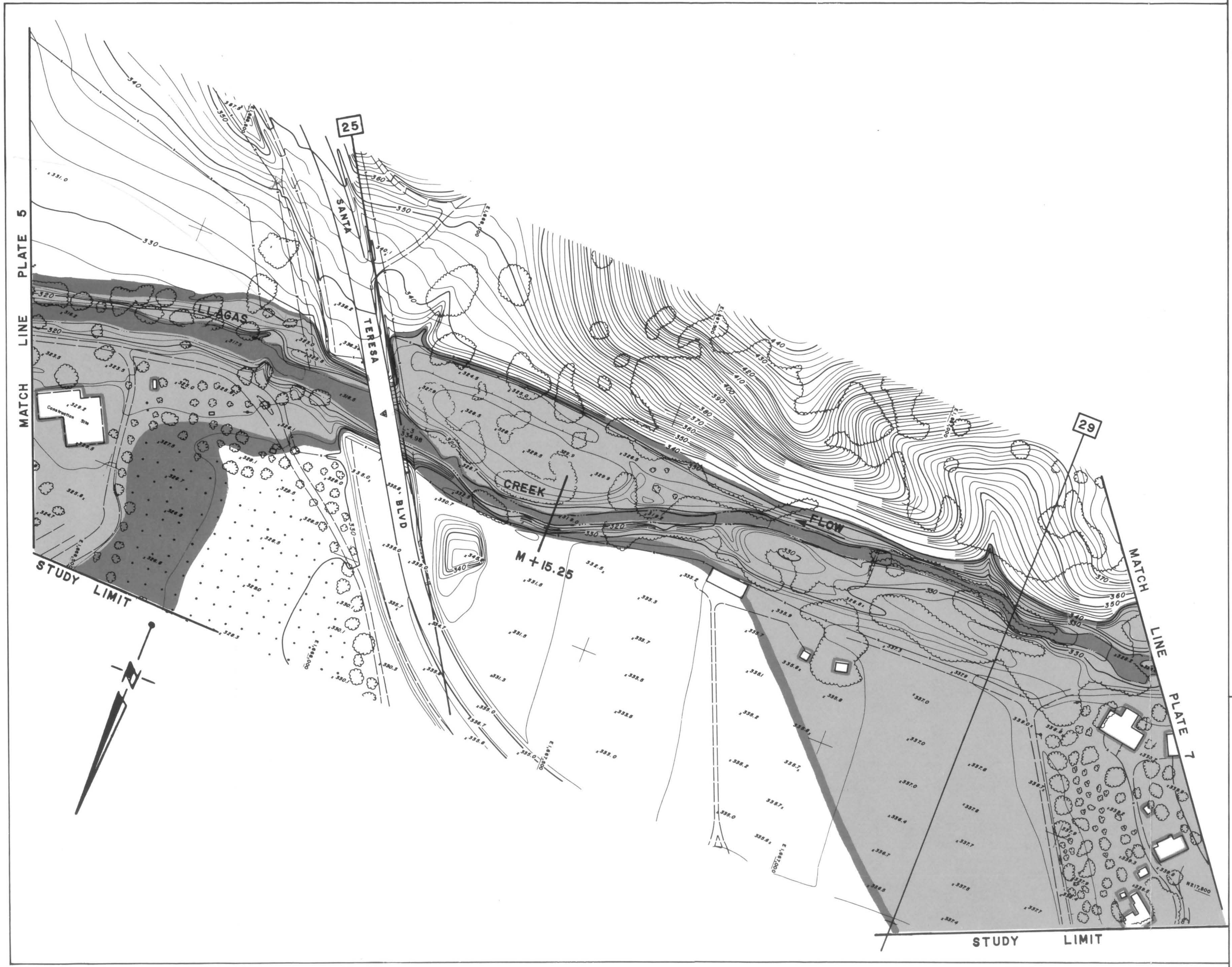
DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
LLAGAS CREEK STA. 48 — 69
JULY 1975



LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH	
22	CROSS SECTION	
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM	
▨	CHANNEL	

EXTENT OF FLOODING OUTSIDE OF STUDY LIMITS NOT INCLUDED IN THIS REPORT.

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200

SCALE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

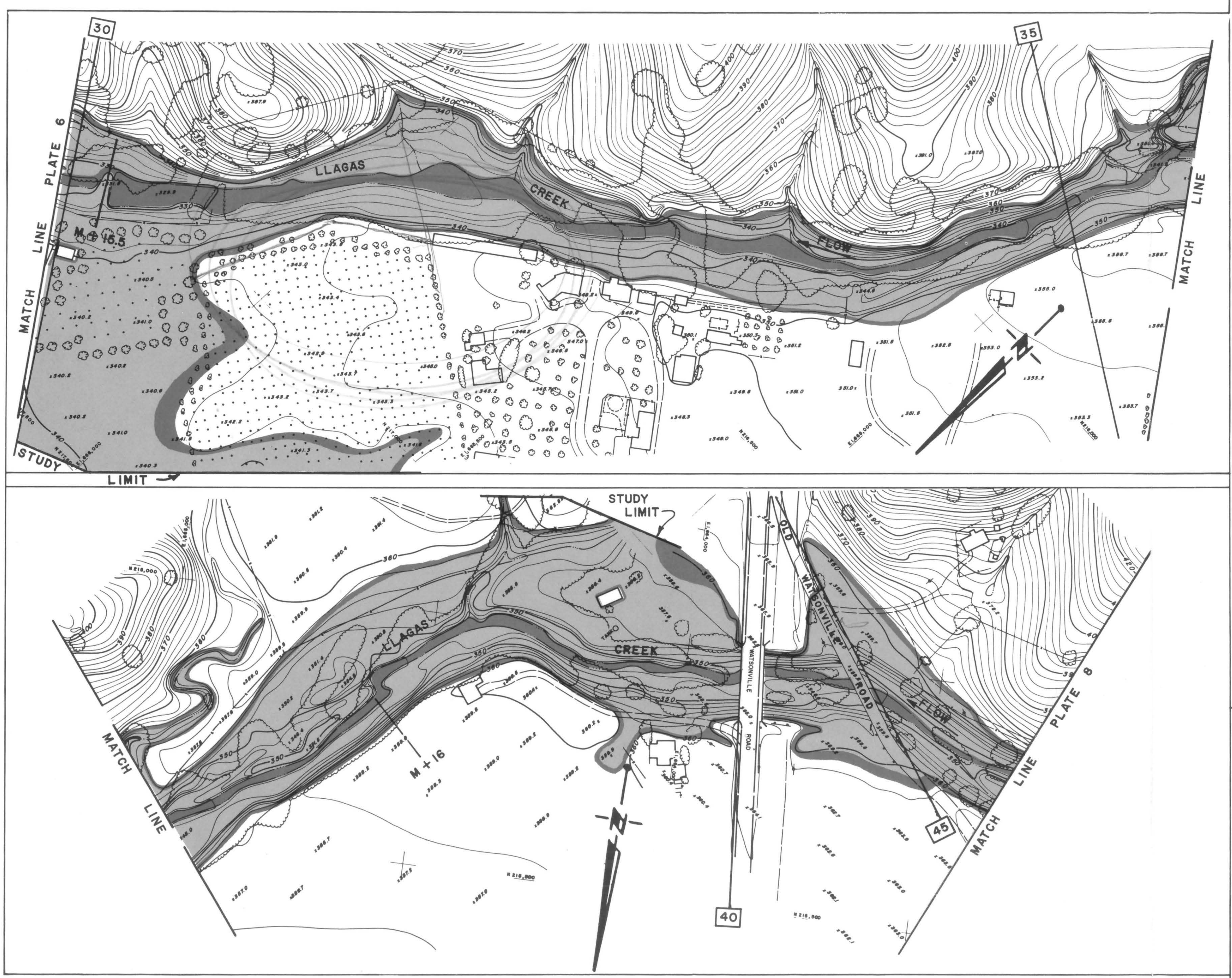
LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS

LLAGAS CREEK STA. 69 — 92

JULY 1975



LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH	
22	CROSS SECTION	
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM	
▨	CHANNEL	

EXTENT OF FLOODING OUTSIDE OF STUDY LIMIT NOT INCLUDED IN THIS REPORT.

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT

200 100 0 200

SCALE IN FEET

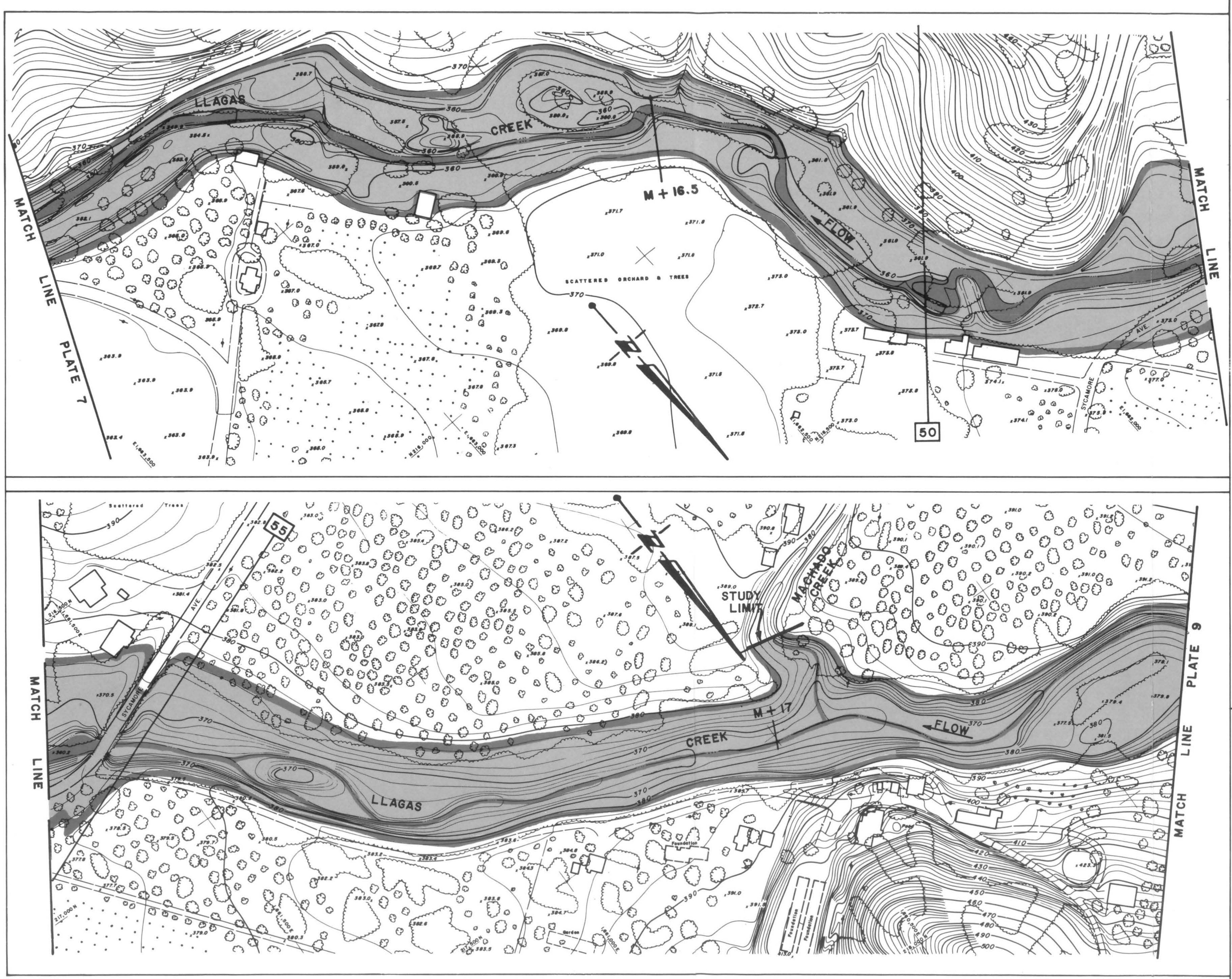
DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
LLAGAS CREEK STA. 92 — 133
JULY 1975



LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH	
22	CROSS SECTION	
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM	
▨	CHANNEL	

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200
SCALE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

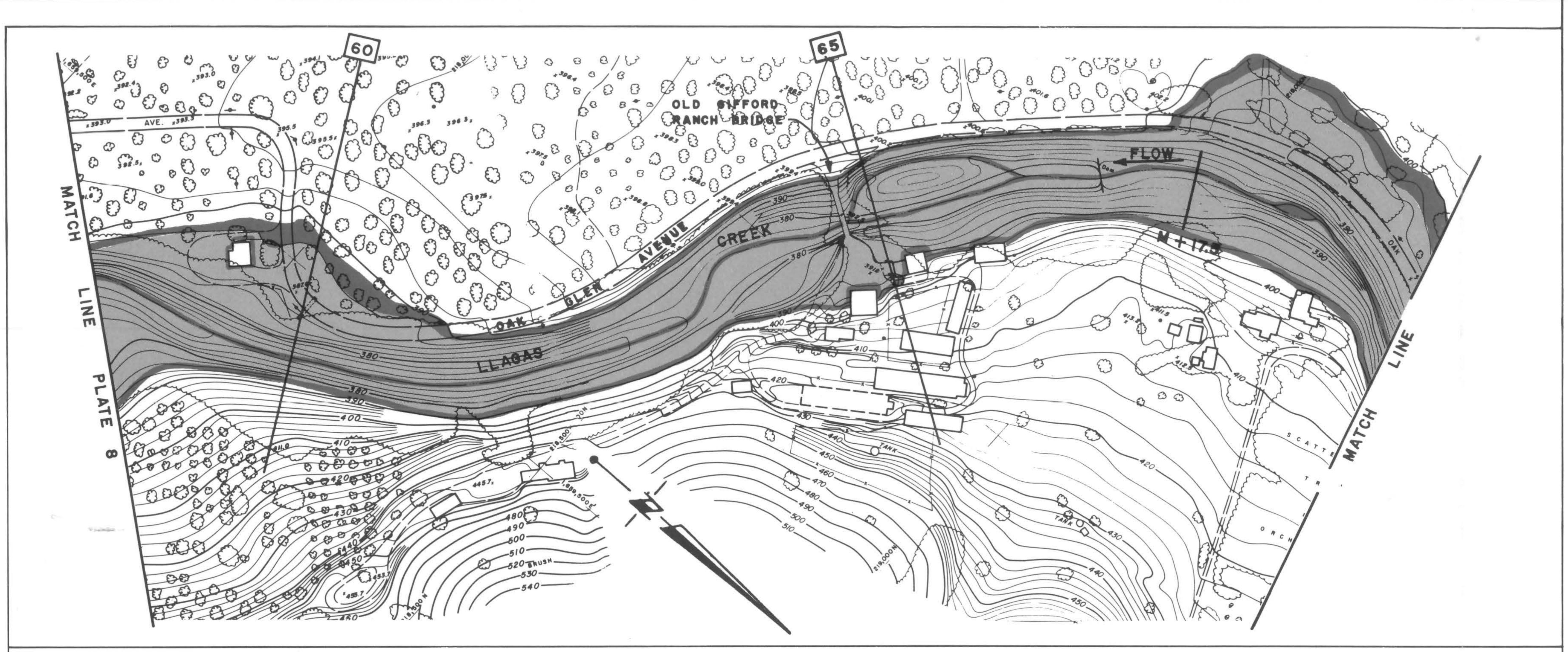
FLOOD PLAIN INFORMATION

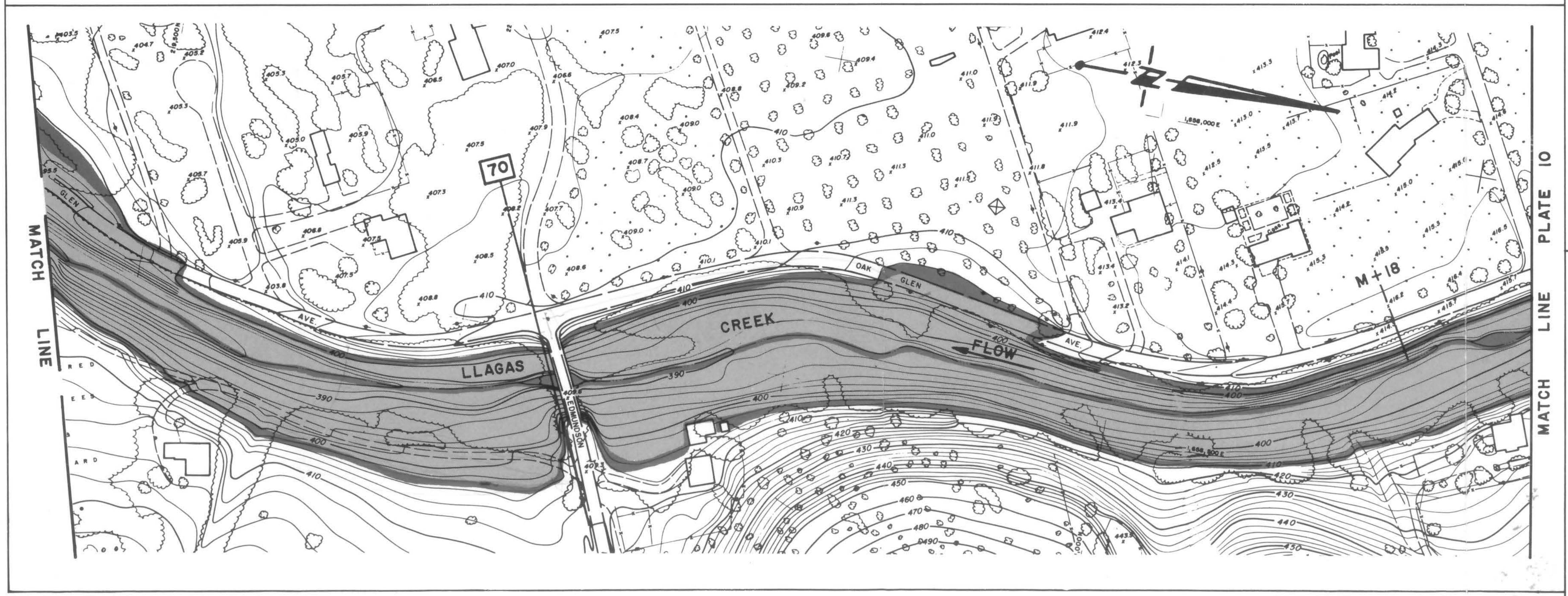
LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
LLAGAS CREEK STA. 133 — 182

JULY 1975





LEGEND

OVERFLOW LIMITS

🟥	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
▨		
M+4	MILES ABOVE MOUTH	
22	CROSS SECTION	
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM	
▬	CHANNEL	

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200

SCALE IN FEET

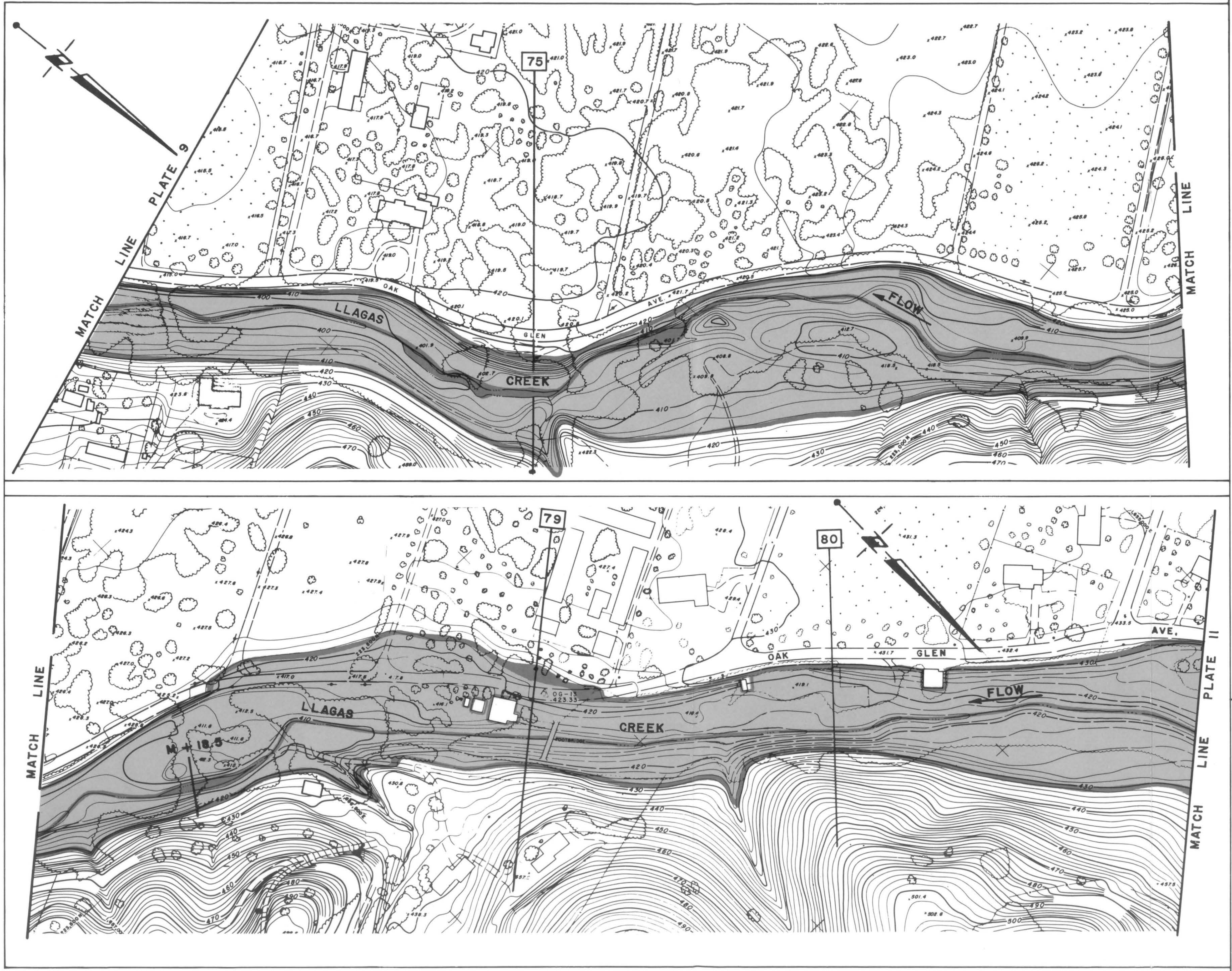
DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
LLAGAS CREEK STA. 182 — 227
JULY 1975



LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH	
22	CROSS SECTION	
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM	
▬	CHANNEL	

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.
SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200
SCALE IN FEET

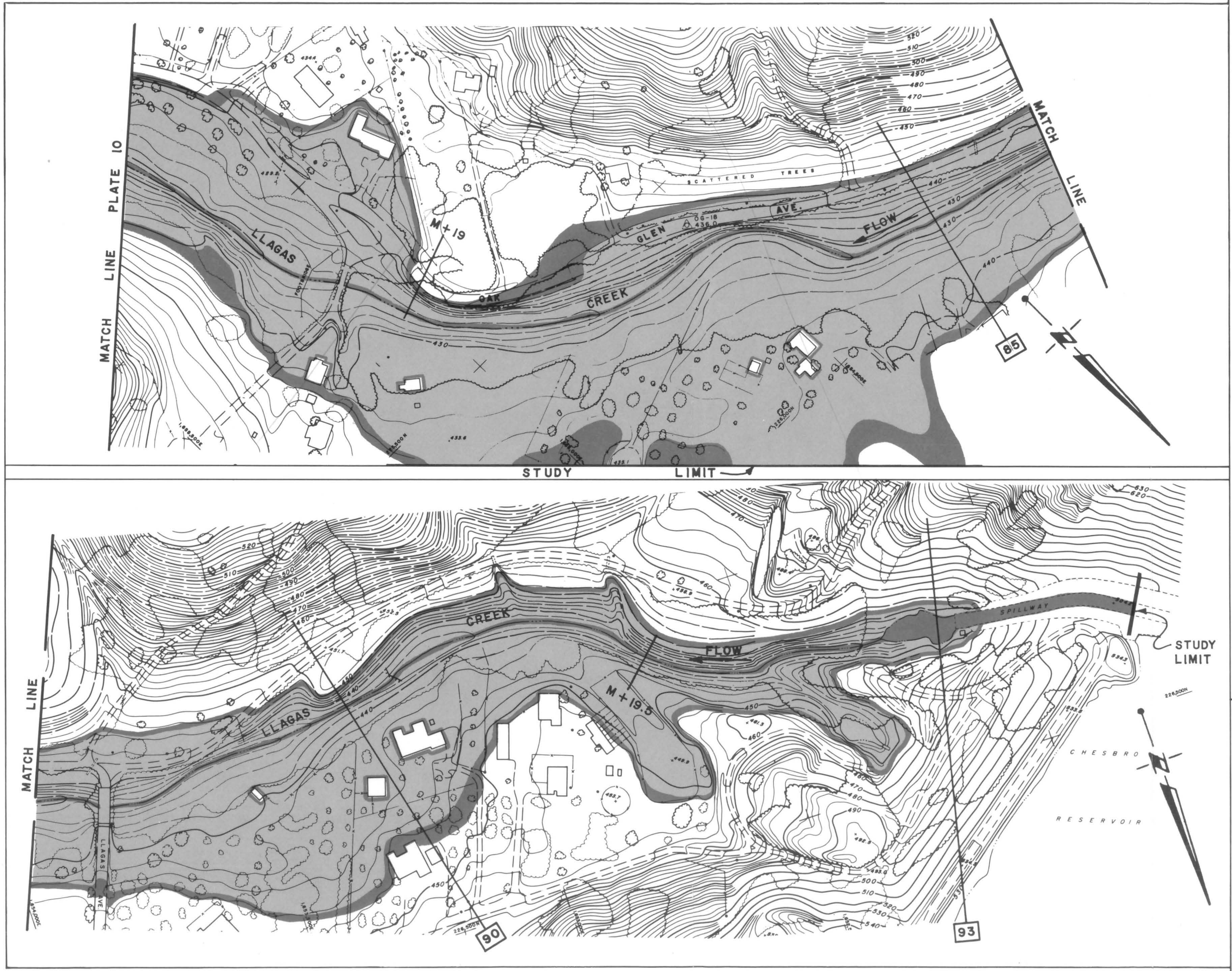
DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
LLAGAS CREEK STA. 227 — 272
JULY 1975



LEGEND

OVERFLOW LIMITS

▨ INTERMEDIATE REGIONAL FLOOD } STANDARD PROJECT FLOOD

M+4 MILES ABOVE MOUTH

22 CROSS SECTION

—260— GROUND ELEVATION IN FEET SEA LEVEL DATUM

▬ CHANNEL

EXTENT OF FLOODING OUTSIDE OF STUDY LIMITS NOT INCLUDED IN THIS REPORT.

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200
SCALE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

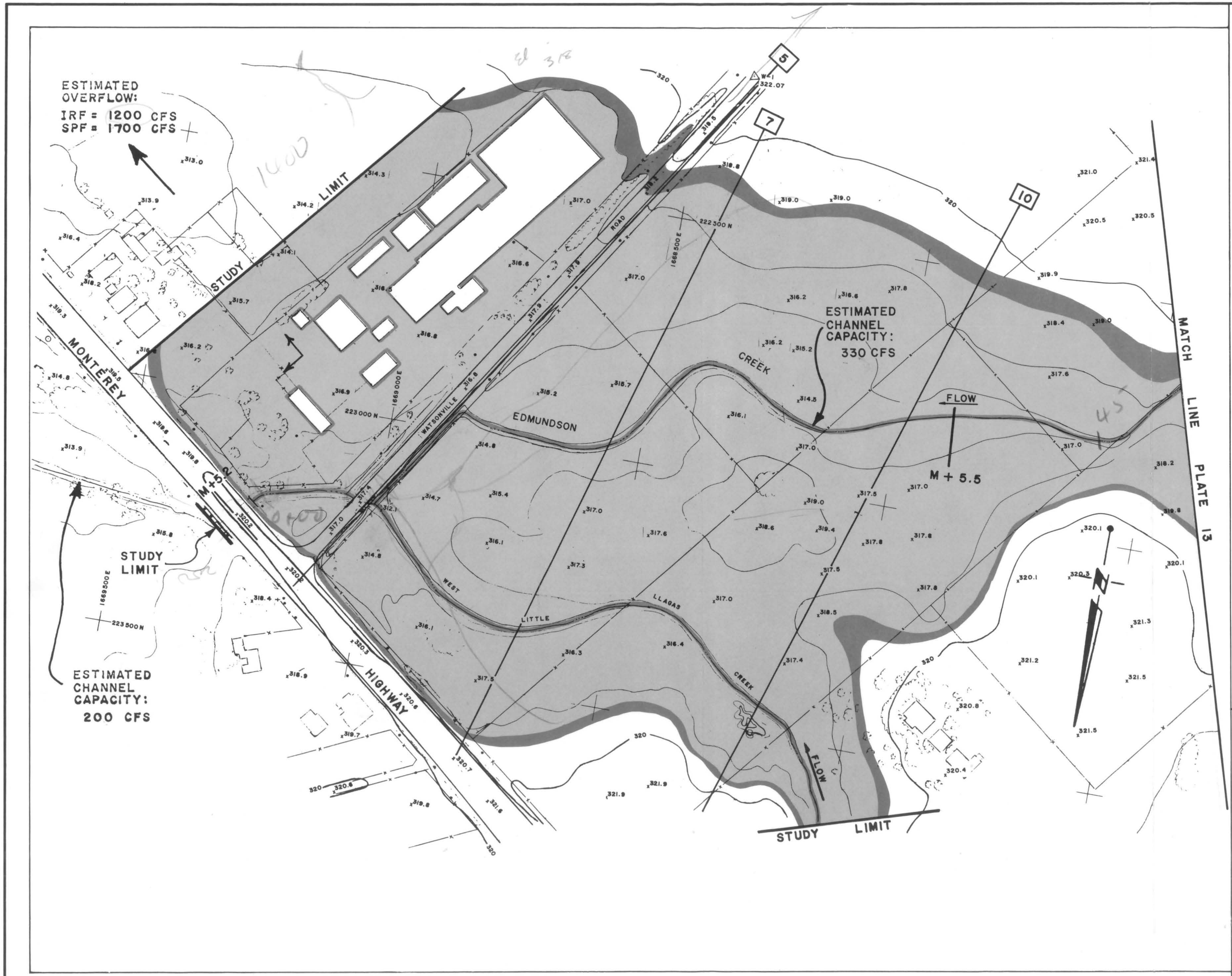
LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
LLAGAS CREEK STA. 272 — 314

JULY 1975

PLATE 11



ESTIMATED OVERFLOW:
IRF = 1200 CFS
SPF = 1700 CFS

1400

El 318

45

ESTIMATED CHANNEL CAPACITY: 330 CFS

ESTIMATED CHANNEL CAPACITY: 200 CFS

LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH	
22	CROSS SECTION	
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM	
━	CHANNEL	
↗	SHEET FLOW	

EXTENT OF FLOODING OUTSIDE OF STUDY LIMIT NOT INCLUDED IN THIS REPORT.

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200

SCALE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

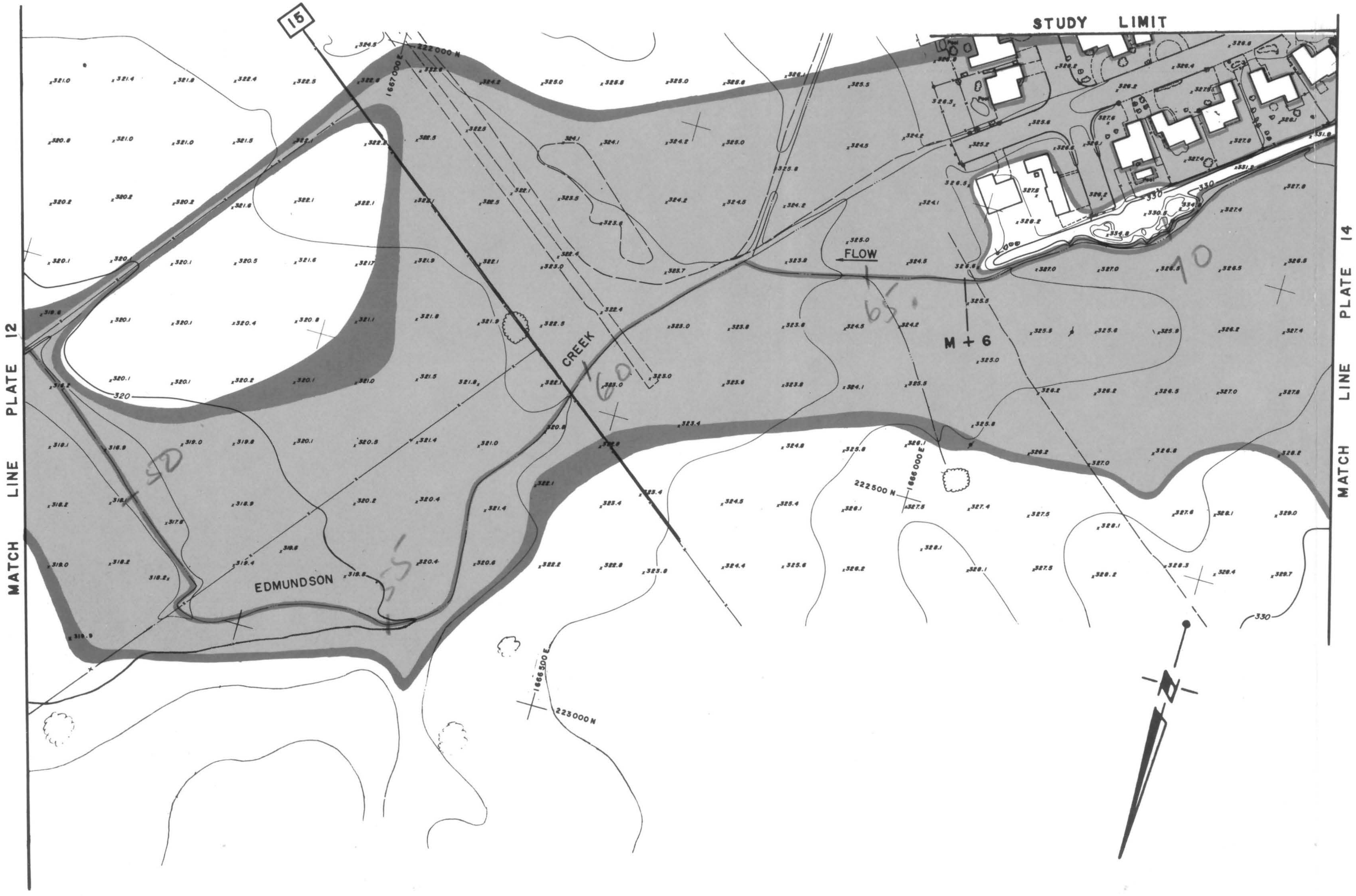
FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
EDMUNDSON CREEK STA. 0 – 22

JULY 1975



LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH	
22	CROSS SECTION	
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM	
━	CHANNEL	

EXTENT OF FLOODING OUTSIDE OF STUDY LIMIT NOT INCLUDED IN THIS REPORT.

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200

SCALE IN FEET

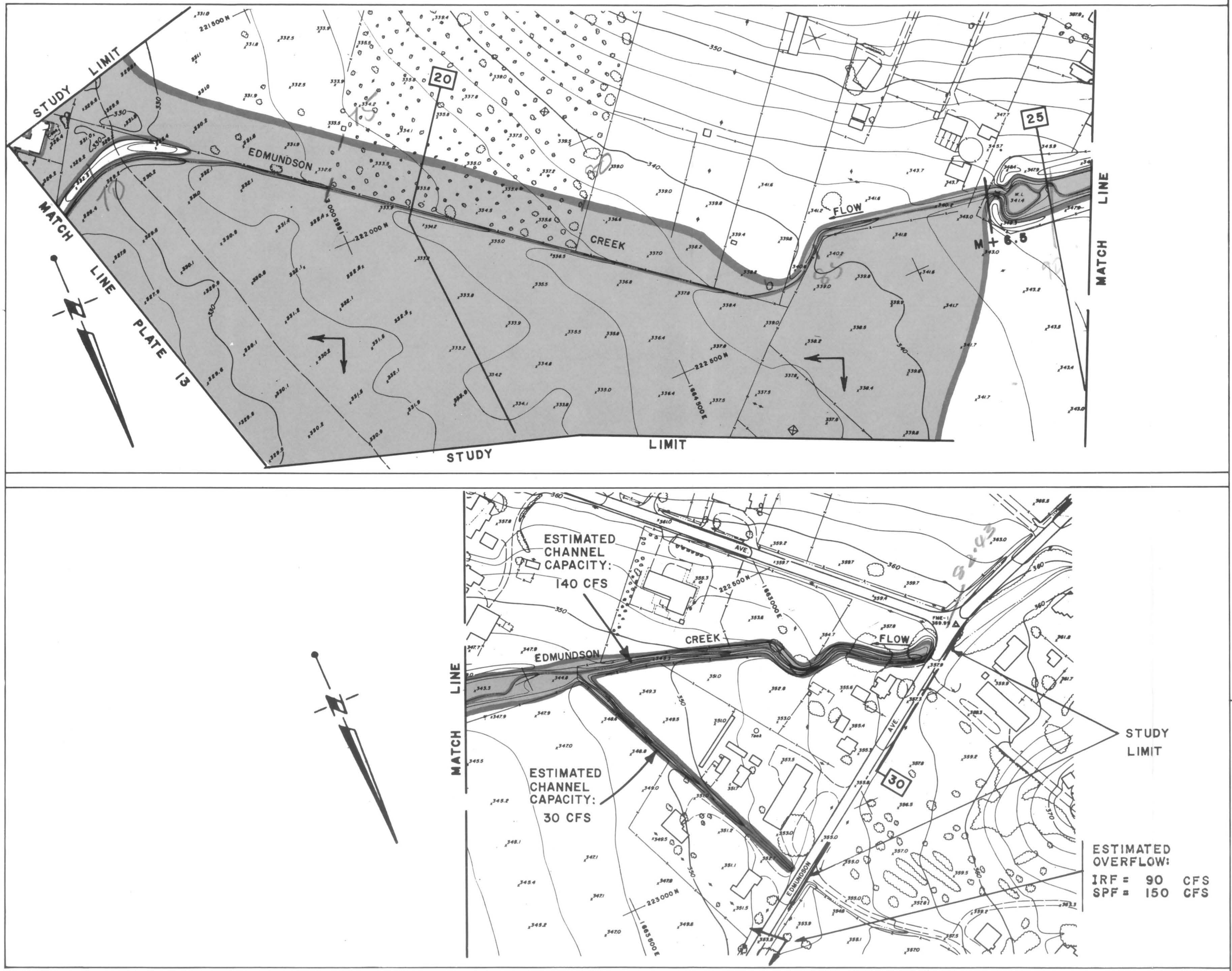
DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
EDMUNDSON CREEK STA. 22 — 50
JULY 1975



ESTIMATED CHANNEL CAPACITY: 140 CFS

ESTIMATED CHANNEL CAPACITY: 30 CFS

STUDY LIMIT

ESTIMATED OVERFLOW:
IRF = 90 CFS
SPF = 150 CFS

LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH	
22	CROSS SECTION	
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM	
━━	CHANNEL	
↕	SHEET FLOW	

EXTENT OF FLOODING OUTSIDE OF STUDY LIMITS NOT INCLUDED IN THIS REPORT.

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200
SCALE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

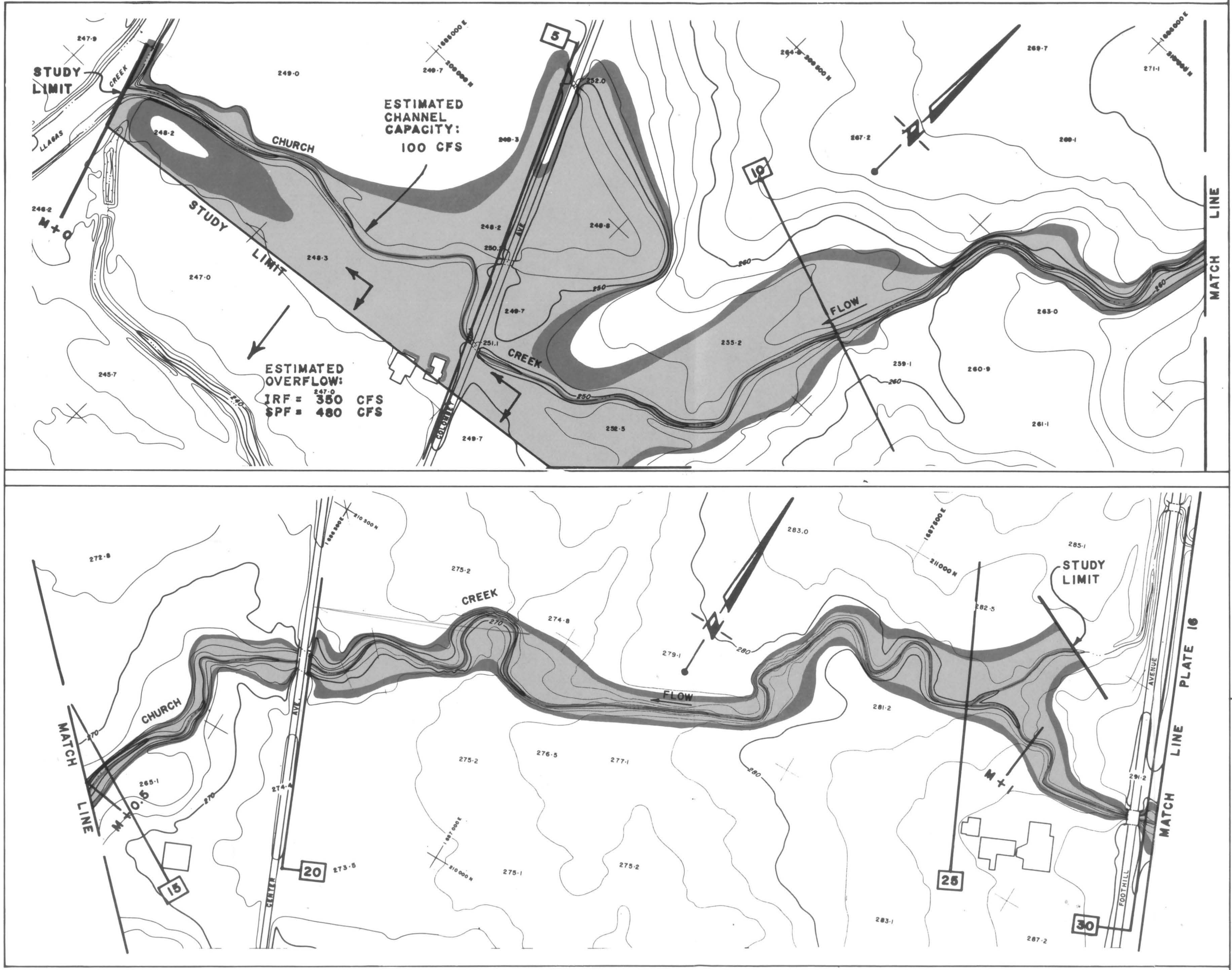
FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
EDMUNDSON CREEK STA. 50 — 85

JULY 1975



LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH	
22	CROSS SECTION	
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM	
▬	CHANNEL	
↘↙	SHEET FLOW	

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200
SCALE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

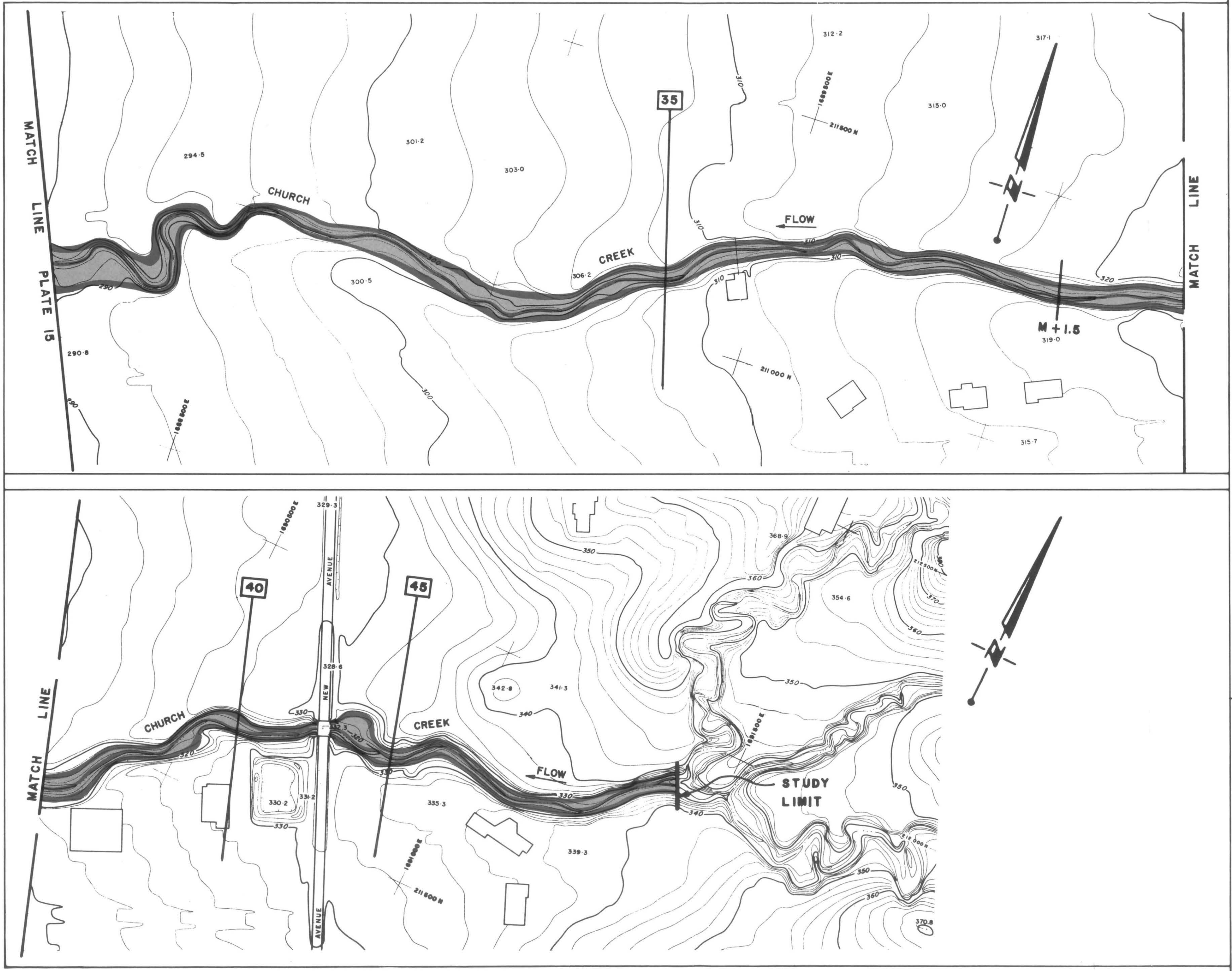
FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
CHURCH CREEK STA. 0 — 56

JULY 1975



LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD } STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH
22	CROSS SECTION
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM
▬	CHANNEL

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

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MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200

SCALE IN FEET

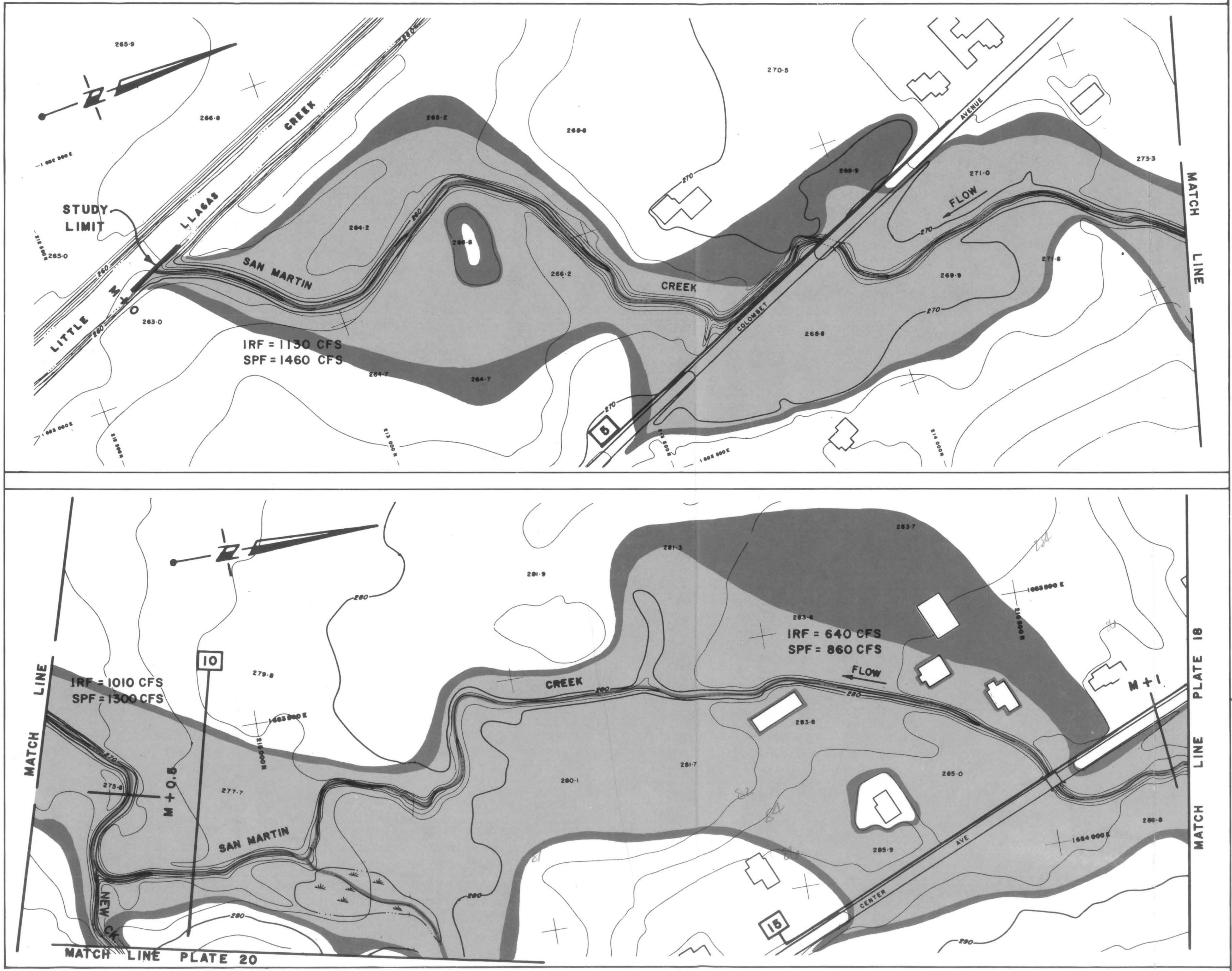
DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
CHURCH CREEK STA. 56 — 95
JULY 1975



LEGEND

OVERFLOW LIMITS

■	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
▨		
■		

M+4 — MILES ABOVE MOUTH

22 — CROSS SECTION

—260— GROUND ELEVATION IN FEET SEA LEVEL DATUM

CHANNEL

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200
SCALE IN FEET

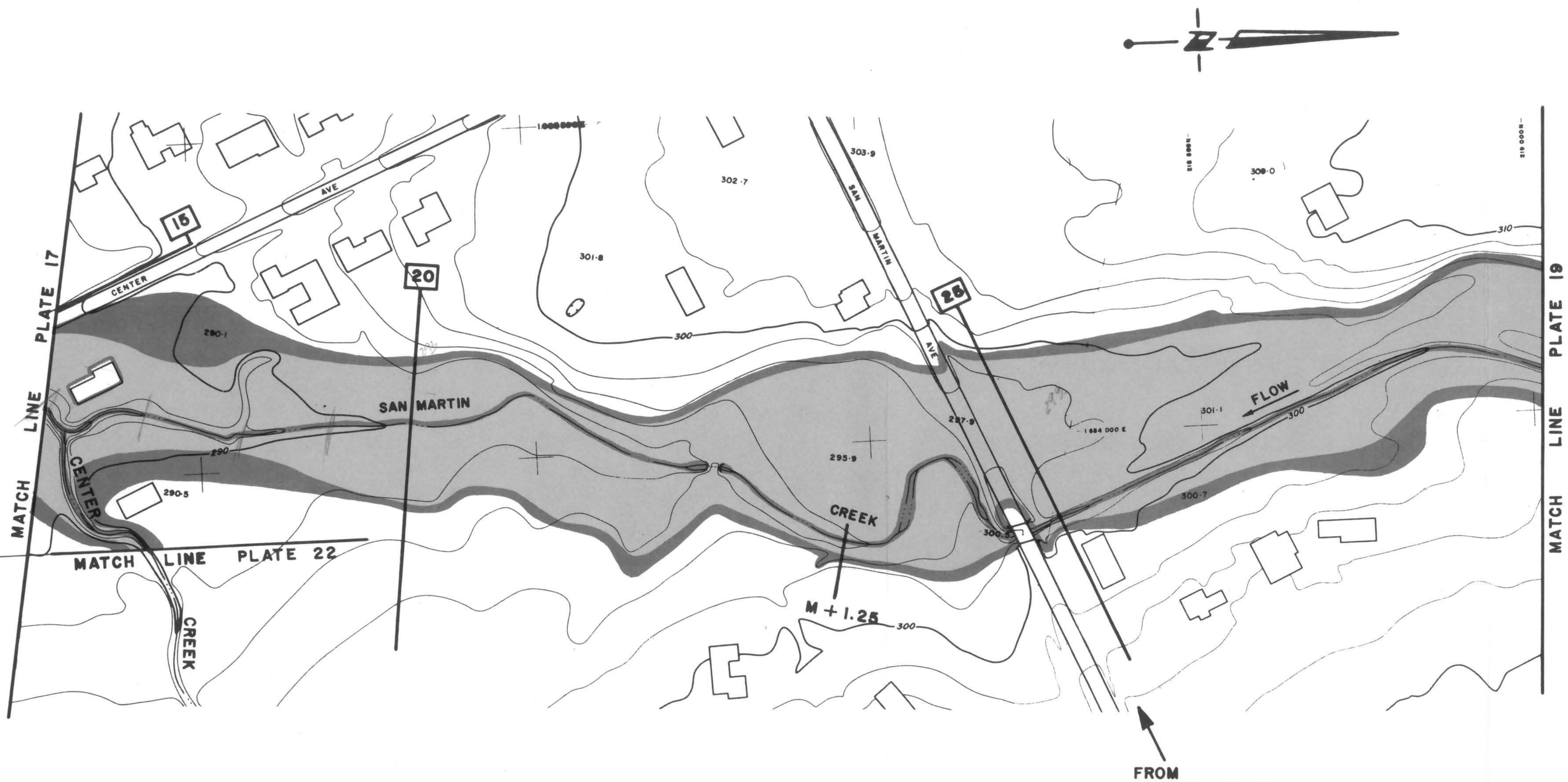
DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
SAN MARTIN CREEK STA. 0 — 53
JULY 1975



FROM
CENTER CREEK
ESTIMATED
OVERFLOW:
IRF = 10 CFS
SPF = 20 CFS

LEGEND

OVERFLOW LIMITS

▨ INTERMEDIATE REGIONAL FLOOD } STANDARD PROJECT FLOOD

M+4 MILES ABOVE MOUTH

22 CROSS SECTION

—260— GROUND ELEVATION IN FEET SEA LEVEL DATUM

CHANNEL

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

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MINIMUM CONTOUR INTERVAL IS 2 FT.

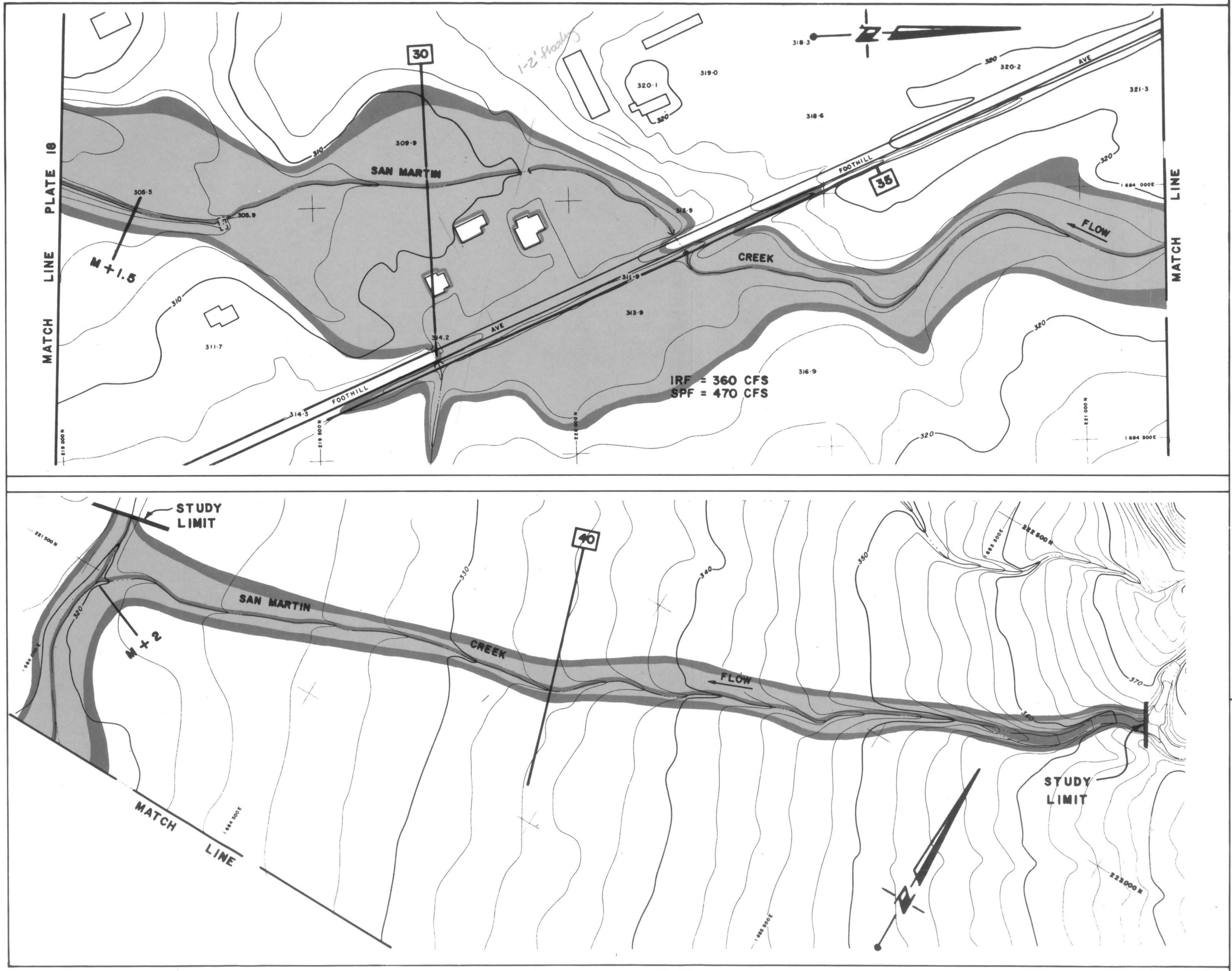
200 100 0 200
SCALE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA
FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
SAN MARTIN CREEK STA. 53 — 78
JULY 1975



LEGEND

OVERFLOW LIMITS

▨ INTERMEDIATE REGIONAL FLOOD } STANDARD PROJECT FLOOD

M+4 MILES ABOVE MOUTH

22 CROSS SECTION

—260— GROUND ELEVATION IN FEET SEA LEVEL DATUM

▬ CHANNEL

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

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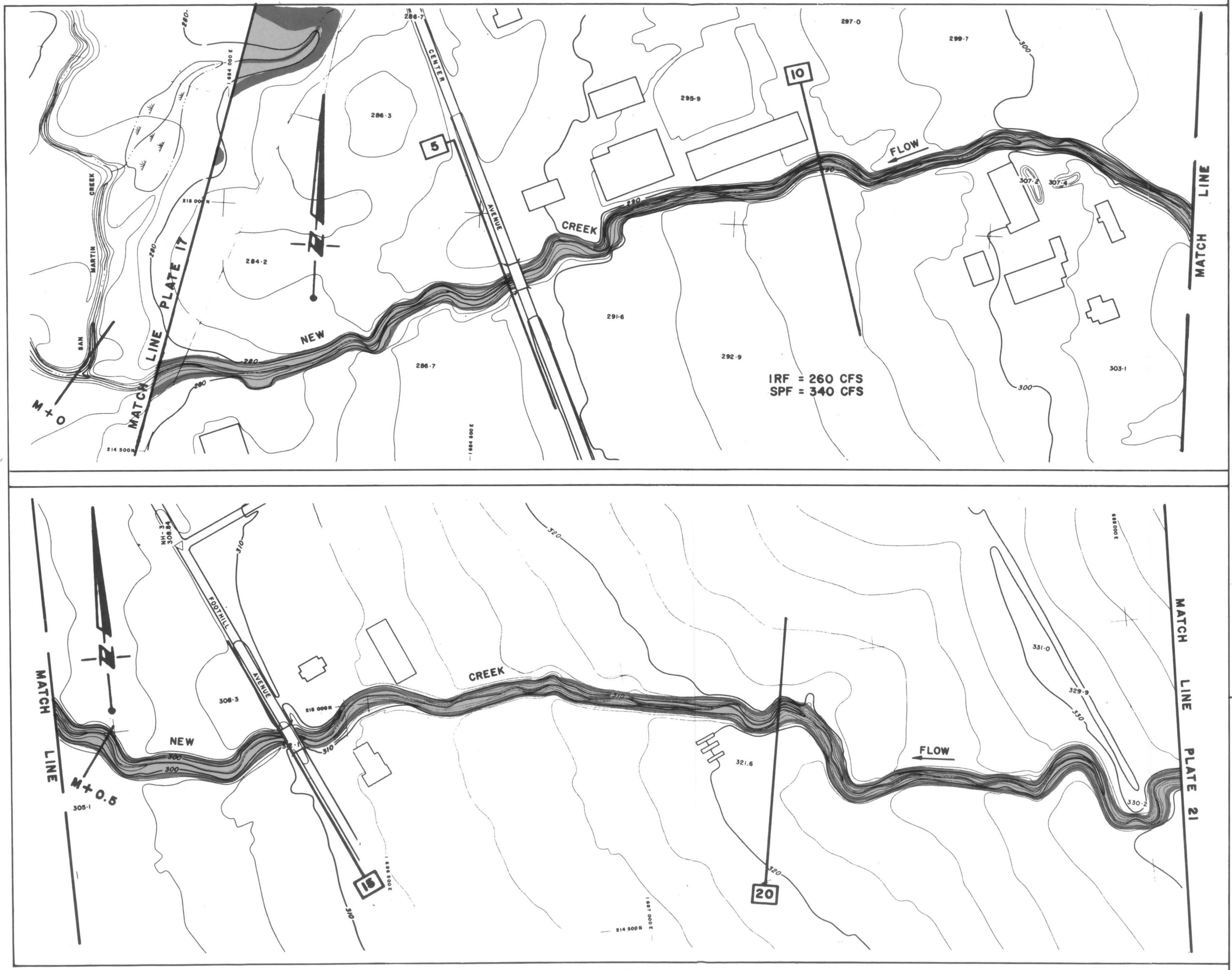
200 100 0 200
SCALE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA
FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
SAN MARTIN CREEK STA. 78 — 126
JULY 1975



LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH	
22	CROSS SECTION	
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM	
▬	CHANNEL	

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200

SCALE IN FEET

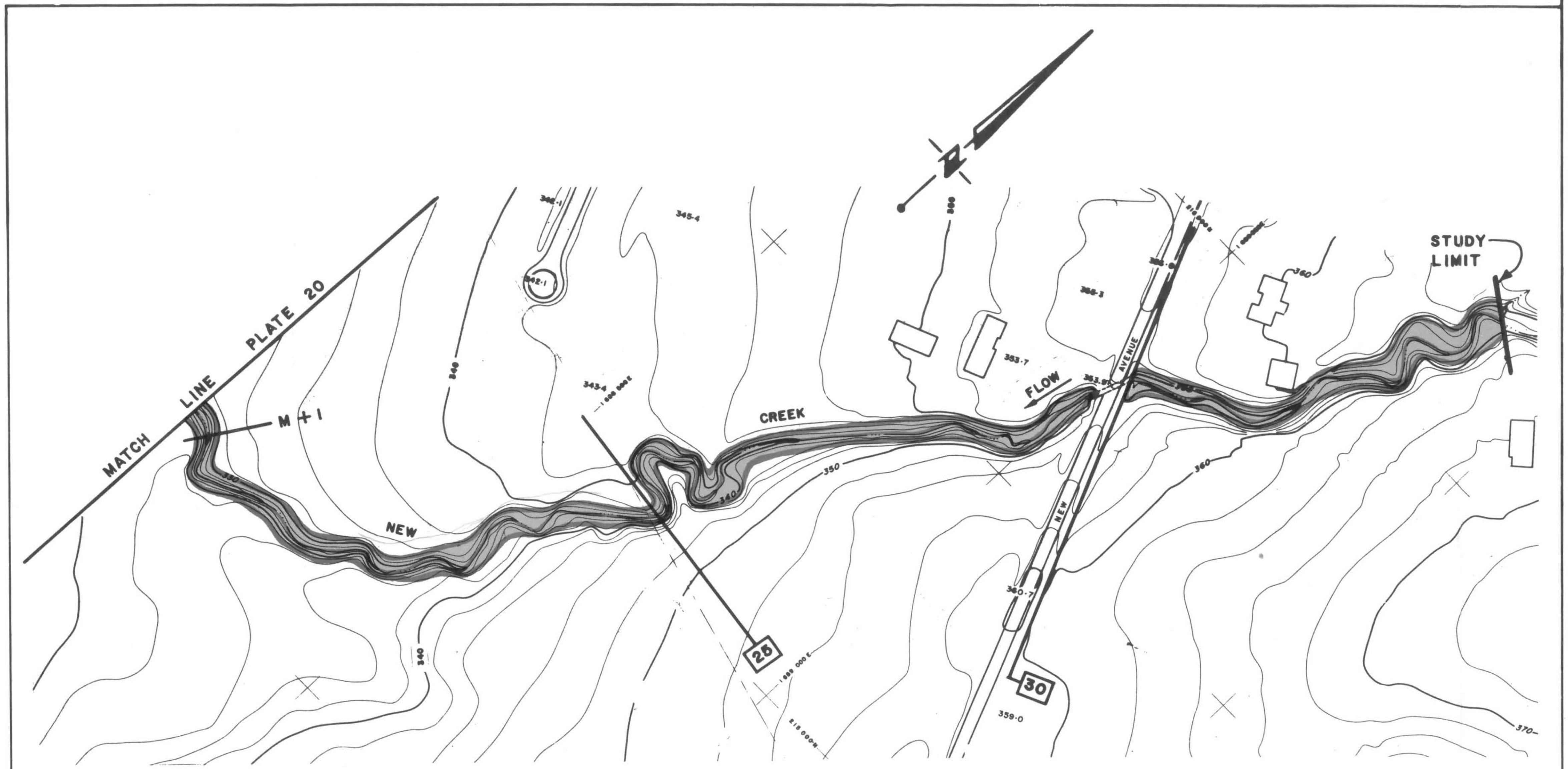
DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
NEW CREEK STA. 0 – 52
JULY 1975



LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD

M+4 MILES ABOVE MOUTH

22 CROSS SECTION

—260— GROUND ELEVATION IN FEET SEA LEVEL DATUM

CHANNEL

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

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MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200
SCALE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

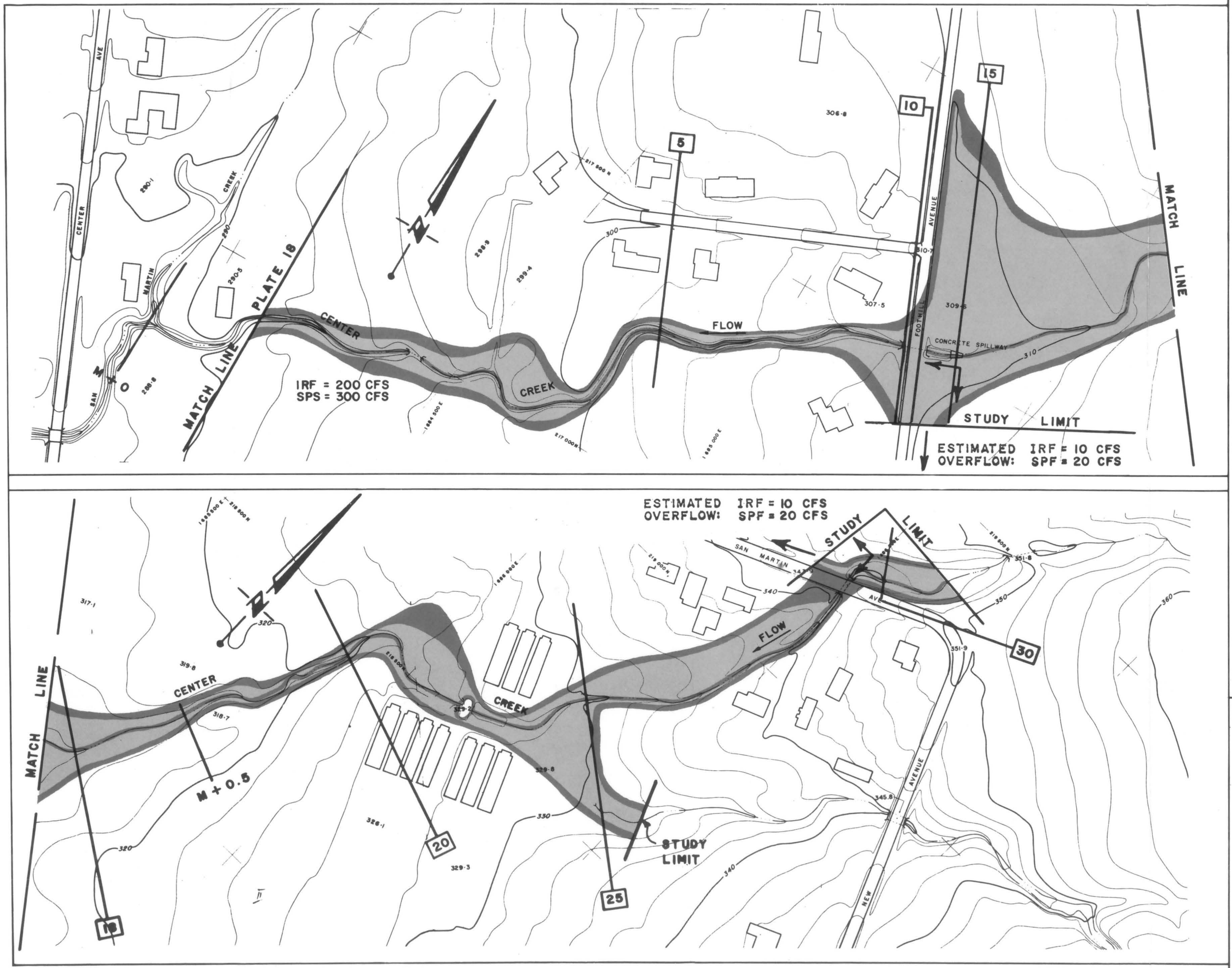
FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
NEW CREEK STA. 52 – 81
JULY 1975

PLATE 21



LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD } STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH
22	CROSS SECTION
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM
▬	CHANNEL
↗↙	SHEET FLOW

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

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MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200
SCALE IN FEET

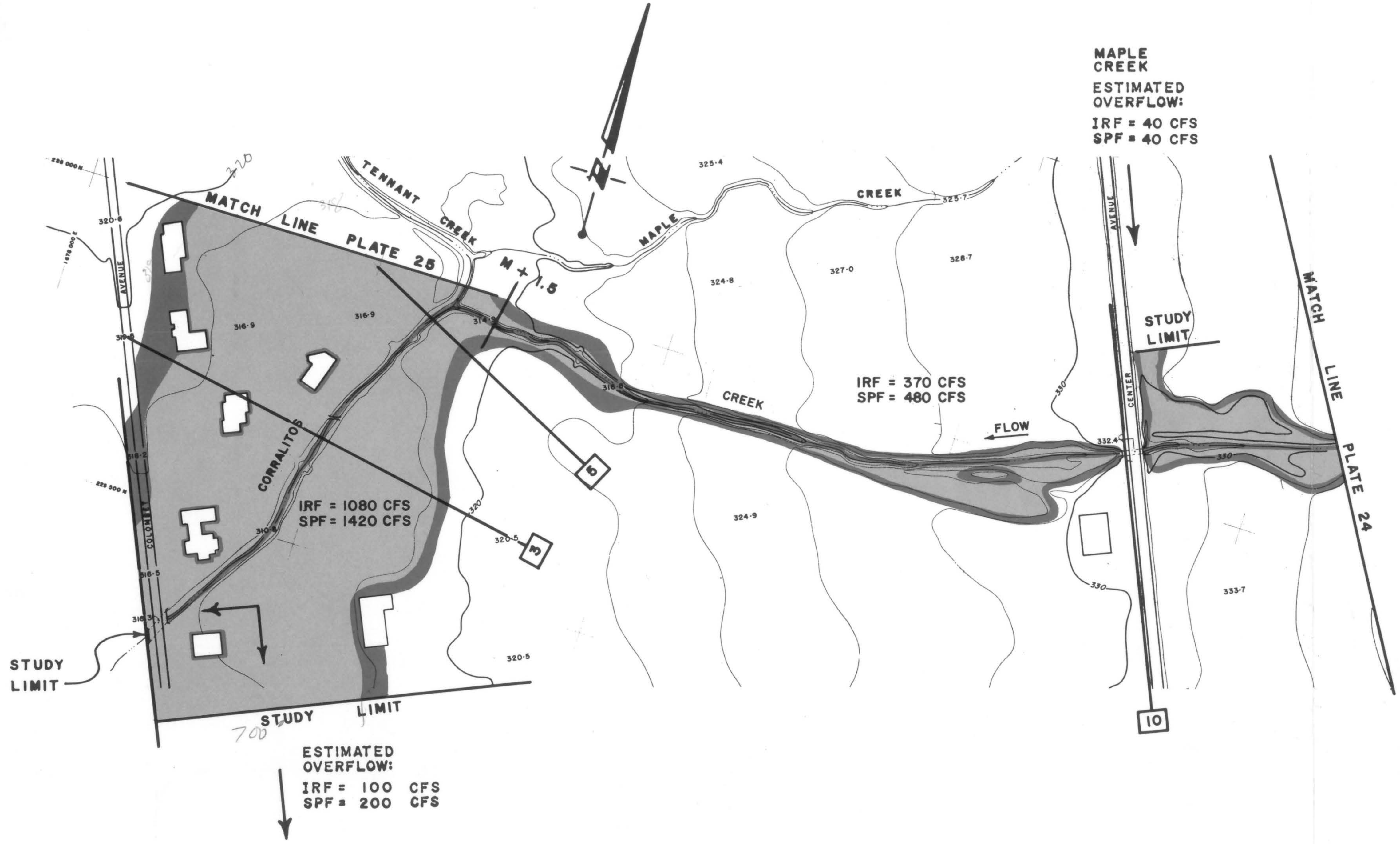
DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
CENTER CREEK STA. 0 – 45
JULY 1975



LEGEND

OVERFLOW LIMITS

▨ INTERMEDIATE REGIONAL FLOOD } STANDARD PROJECT FLOOD

M+4 MILES ABOVE MOUTH

22 CROSS SECTION

—260— GROUND ELEVATION IN FEET SEA LEVEL DATUM

CHANNEL

SHEET FLOW

EXTENT OF FLOODING OUTSIDE OF STUDY LIMITS NOT INCLUDED IN THIS REPORT.

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200
SCALE IN FEET

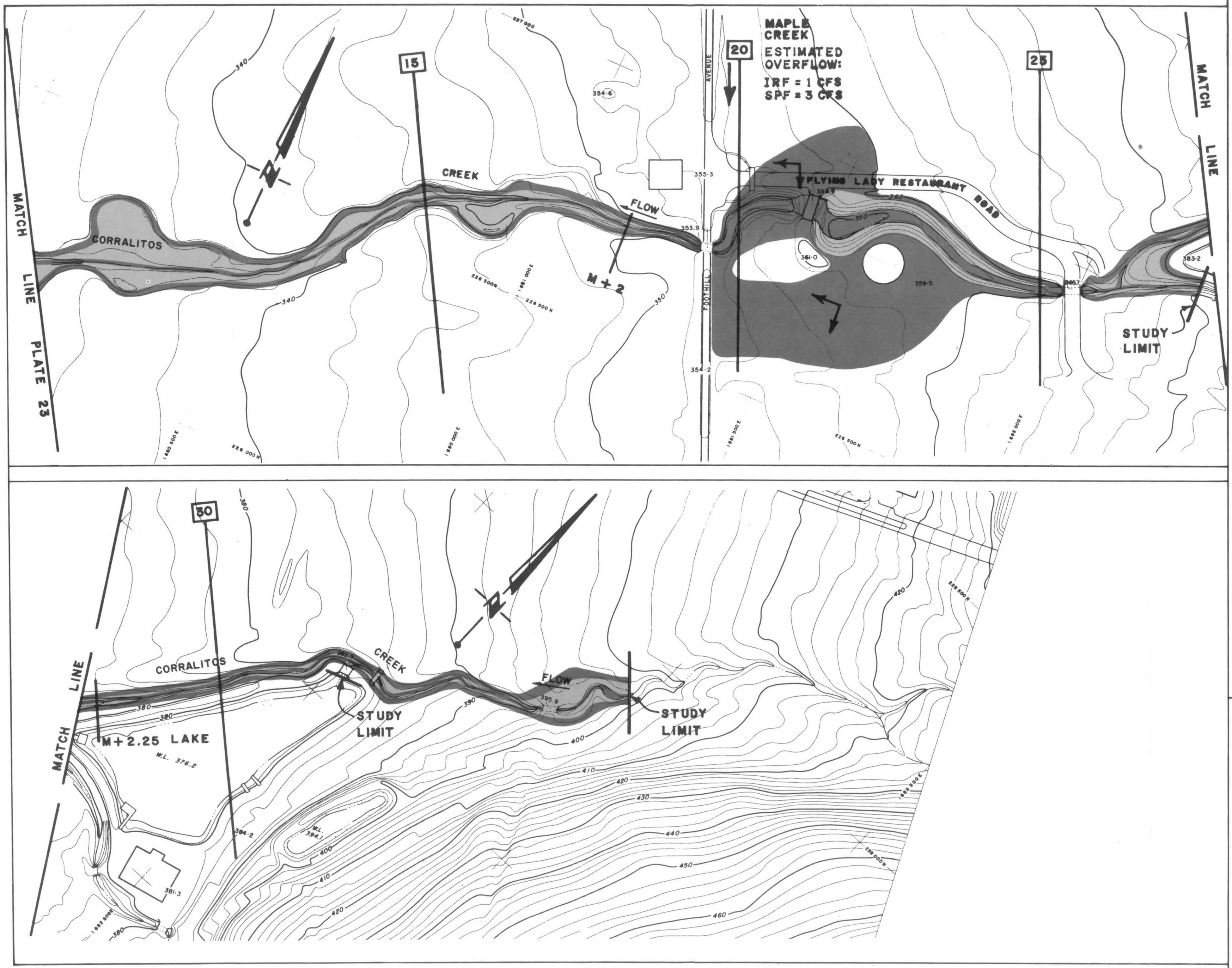
DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
CORRALITOS CREEK STA. 0 — 23
JULY 1975



LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH	
22	CROSS SECTION	
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM	
▬	CHANNEL	
↗	SHEET FLOW	

EXTENT OF FLOODING OUTSIDE OF STUDY LIMITS NOT INCLUDED IN THIS REPORT.

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200
SCALE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

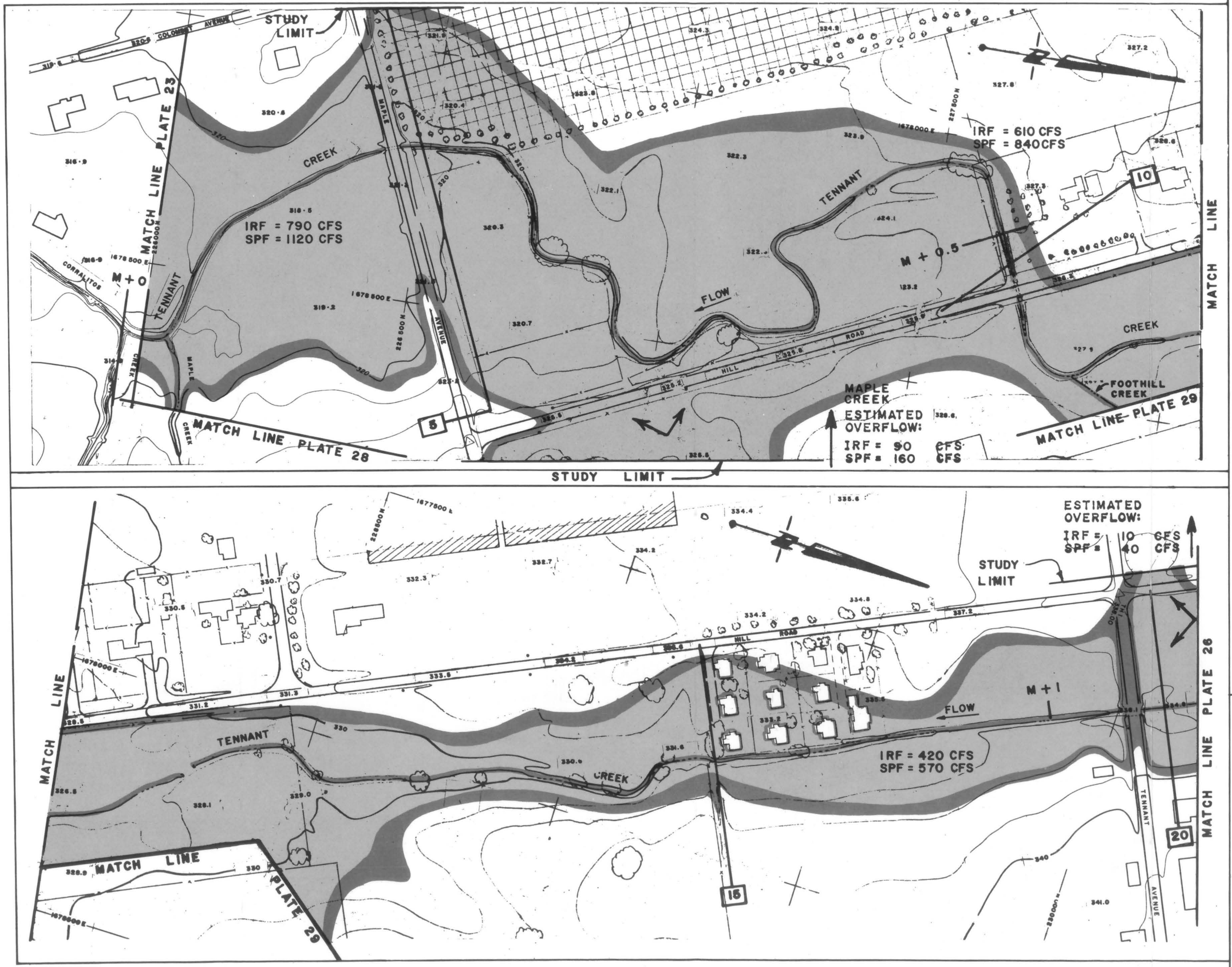
FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
CORRALITOS CREEK STA. 23-59

JULY 1975



LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH	
22	CROSS SECTION	
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM	
━	CHANNEL	
⟩	SHEET FLOW	

EXTENT OF FLOODING OUTSIDE OF STUDY LIMITS NOT INCLUDED IN THIS REPORT.

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200
SCALE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

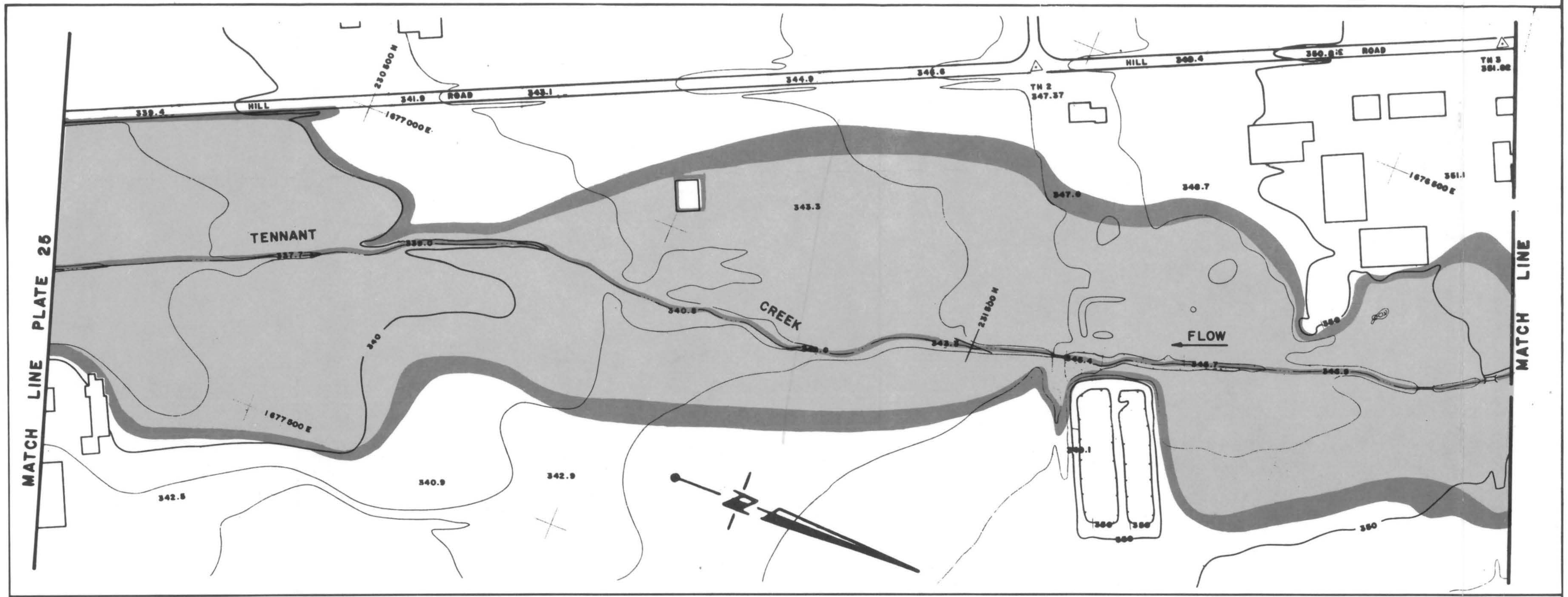
FLOOD PLAIN INFORMATION

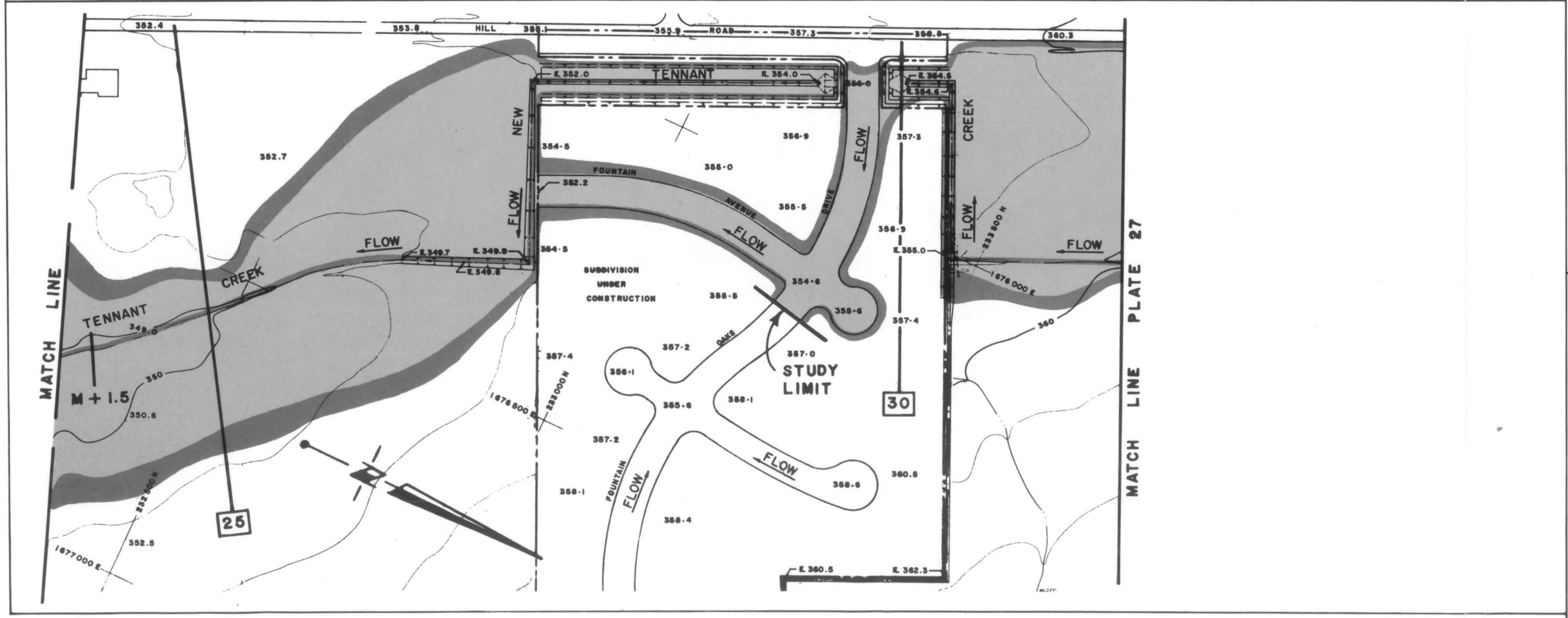
LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
TENNANT CREEK STA. 0 – 55

JULY 1975





LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH	
22	CROSS SECTION	
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM	
━━	CHANNEL	

EXTENT OF FLOODING OUTSIDE OF STUDY LIMIT NOT INCLUDED IN THIS REPORT.

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.
SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200
SCALE IN FEET

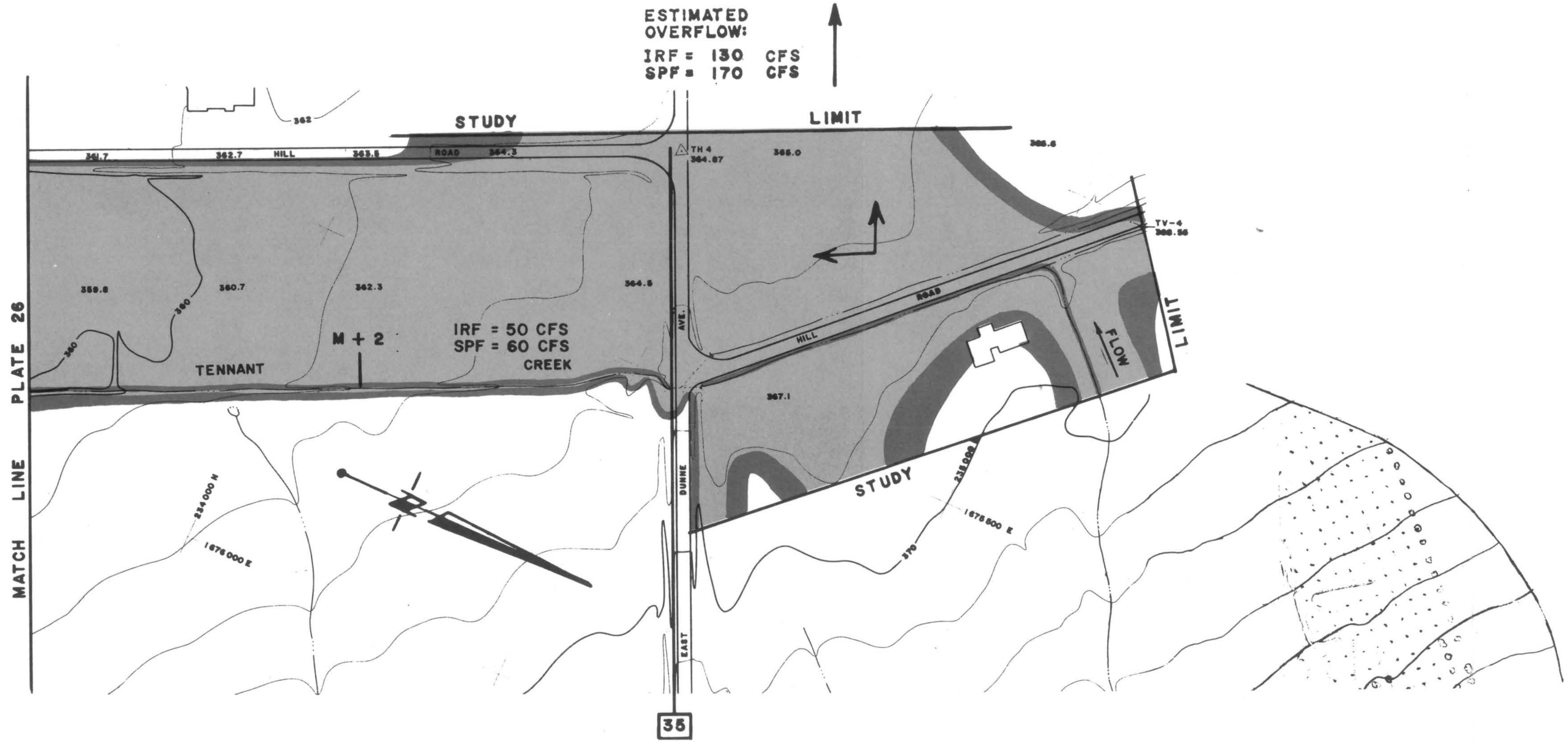
DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
TENNANT CREEK STA 55 — 100
JULY 1975



LEGEND

OVERFLOW LIMITS

▨ INTERMEDIATE REGIONAL FLOOD } STANDARD PROJECT FLOOD

M+4 MILES ABOVE MOUTH

22 CROSS SECTION

—260— GROUND ELEVATION IN FEET SEA LEVEL DATUM

CHANNEL

SHEET FLOW

EXTENT OF FLOODING OUTSIDE OF STUDY LIMIT NOT INCLUDED IN THIS REPORT.

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.
SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200
SCALE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

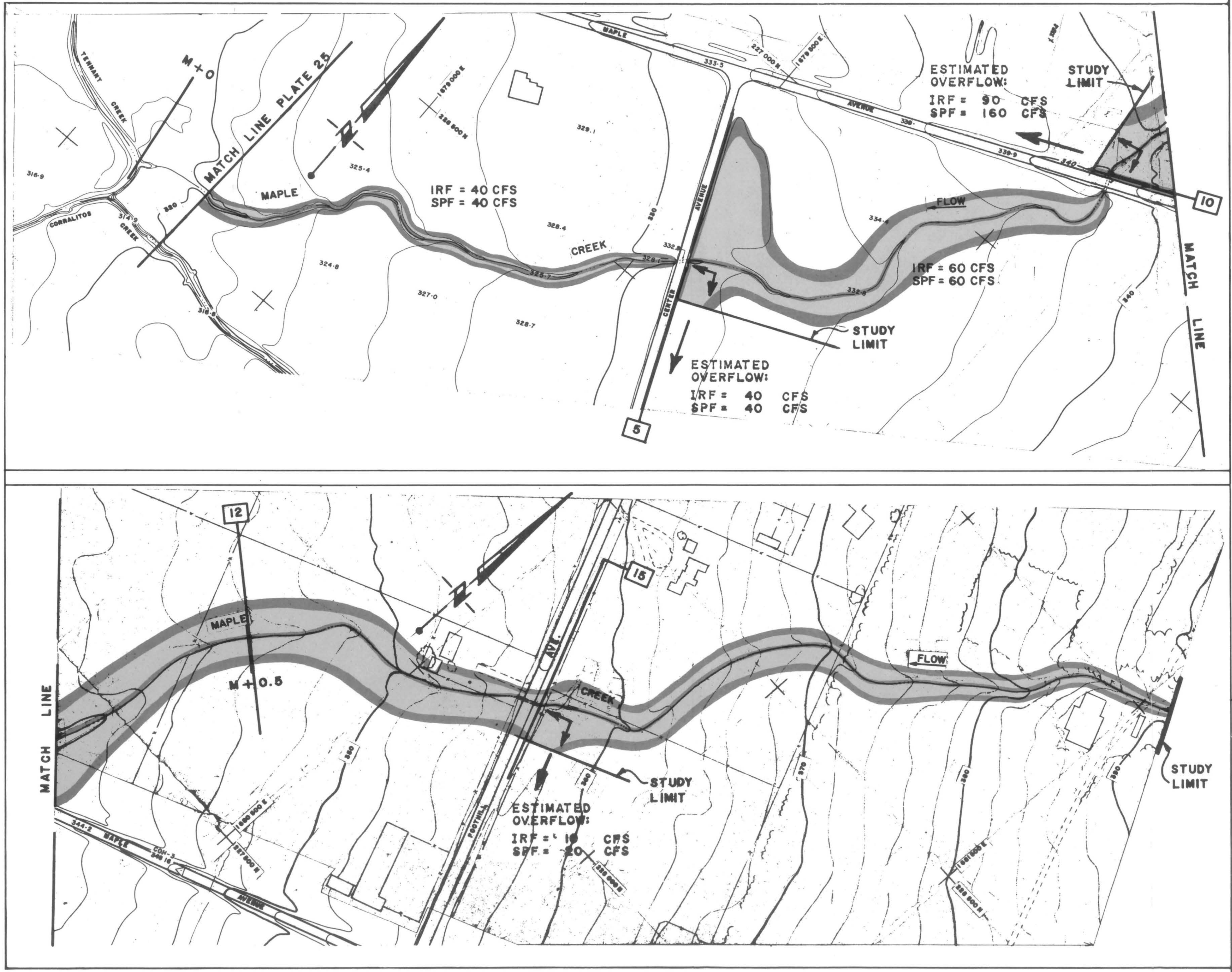
FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
TENNANT CREEK STA. 100 – 118
JULY 1975

PLATE 27



LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH	
22	CROSS SECTION	
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM	
━	CHANNEL	
↗↙	SHEET FLOW	

EXTENT OF FLOODING OUTSIDE OF STUDY LIMIT NOT INCLUDED IN THIS REPORT.

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200
SCALE IN FEET

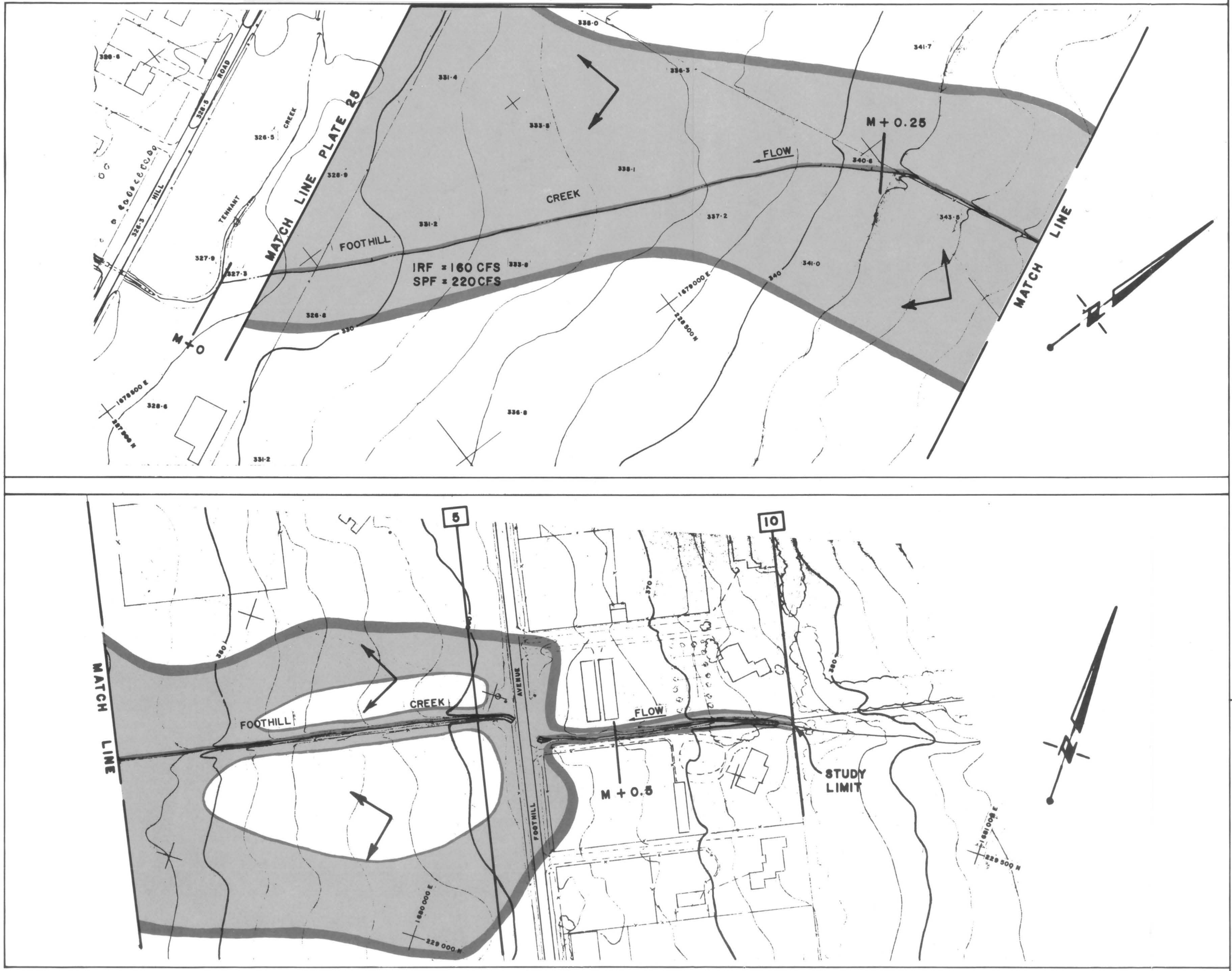
DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
MAPLE CREEK STA. 0 — 45
JULY 1975



LEGEND

OVERFLOW LIMITS

▨	INTERMEDIATE REGIONAL FLOOD	STANDARD PROJECT FLOOD
M+4	MILES ABOVE MOUTH	
22	CROSS SECTION	
—260—	GROUND ELEVATION IN FEET SEA LEVEL DATUM	
	CHANNEL	
	SHEET FLOW	

MAP BASED ON TOPOGRAPHIC MAP FURNISHED BY SANTA CLARA VALLEY WATER DISTRICT.

SCALE 1:1200

LIMITS OF OVERFLOW SHOWN MAY VARY FROM ACTUAL LOCATION ON GROUND AS EXPLAINED IN THE REPORT.

AREAS OUTSIDE THE FLOOD PLAIN MAY BE SUBJECT TO FLOODING FROM LOCAL RUNOFF.

MINIMUM CONTOUR INTERVAL IS 2 FT.

200 100 0 200
SCALE IN FEET

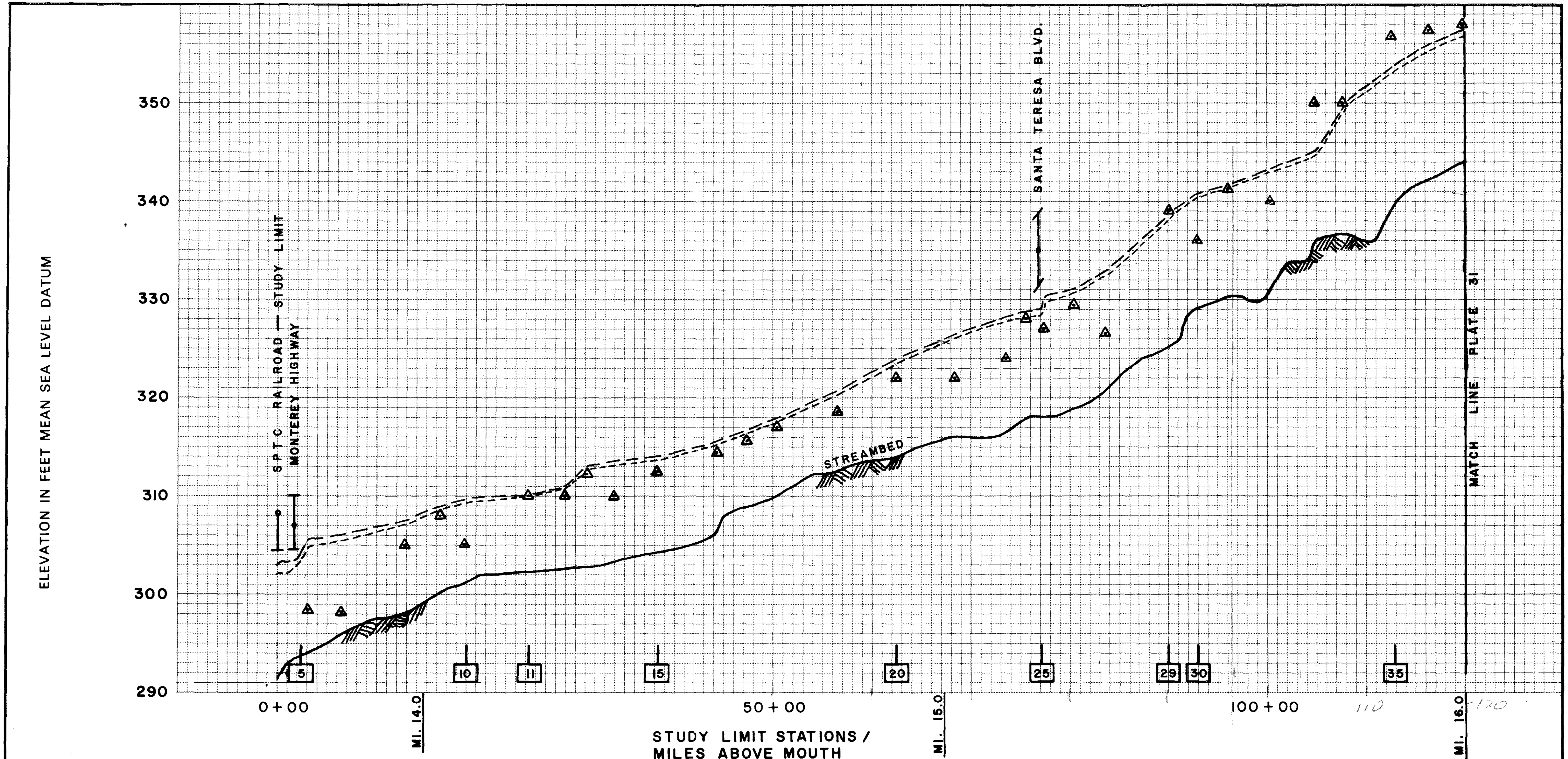
DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

SANTA CLARA COUNTY, CALIFORNIA

FLOODED AREAS
FOOTHILL CREEK STA. 0 — 30
JULY 1975



LEGEND

- I TOP OF BRIDGE RAILING / BRIDGE FLOOR / UNDERCLEARANCE
- ⫯ TOP OF RAIL (RAILROAD BRIDGE)
- △ TOP OF LOW BANK
- — — — — STANDARD PROJECT FLOOD
- — - — - — INTERMEDIATE REGIONAL FLOOD
- 25 CROSS SECTION NUMBER

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

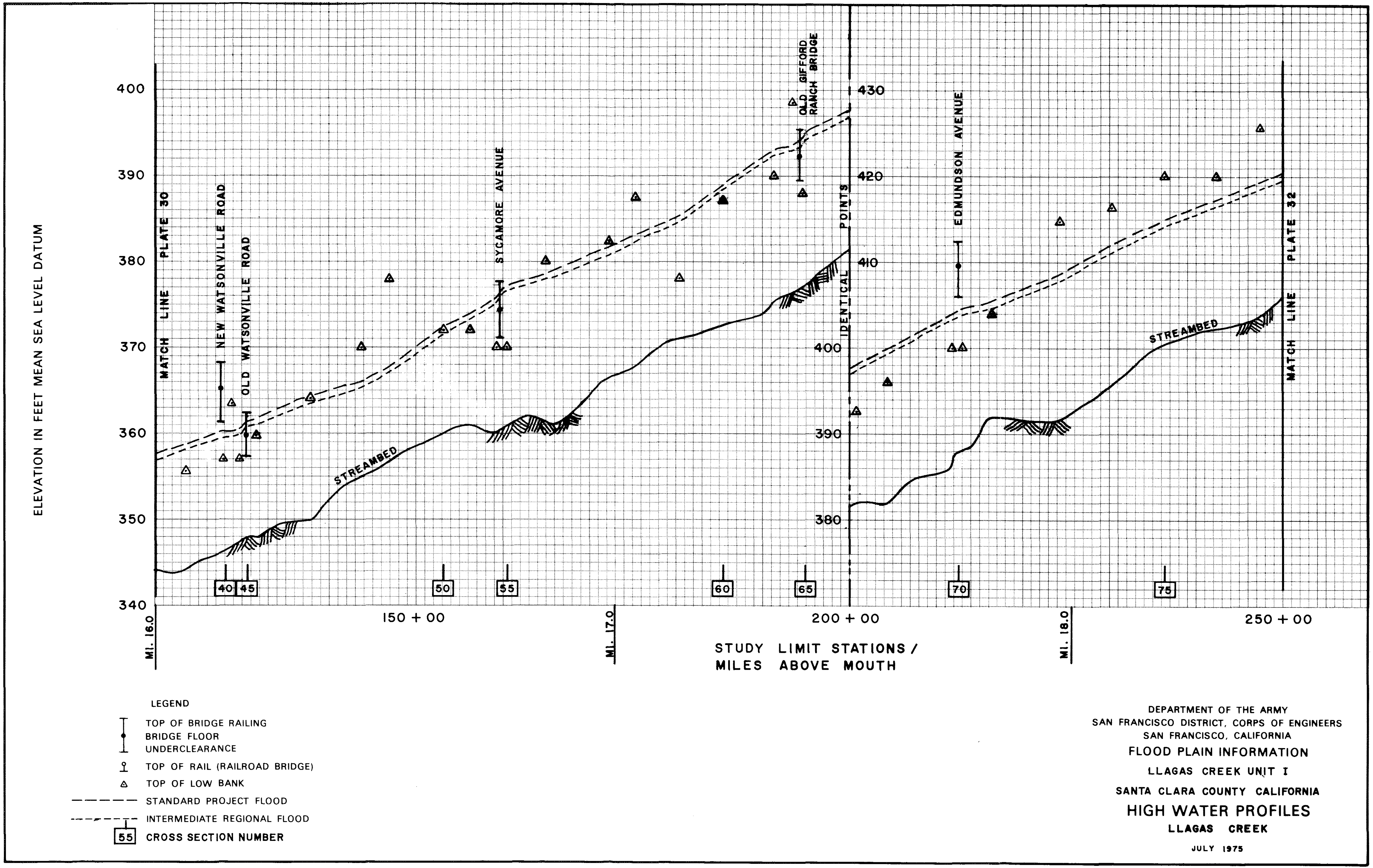
LLAGAS CREEK UNIT I

SANTA CLARA COUNTY CALIFORNIA

HIGH WATER PROFILES

LLAGAS CREEK

JULY 1975



DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

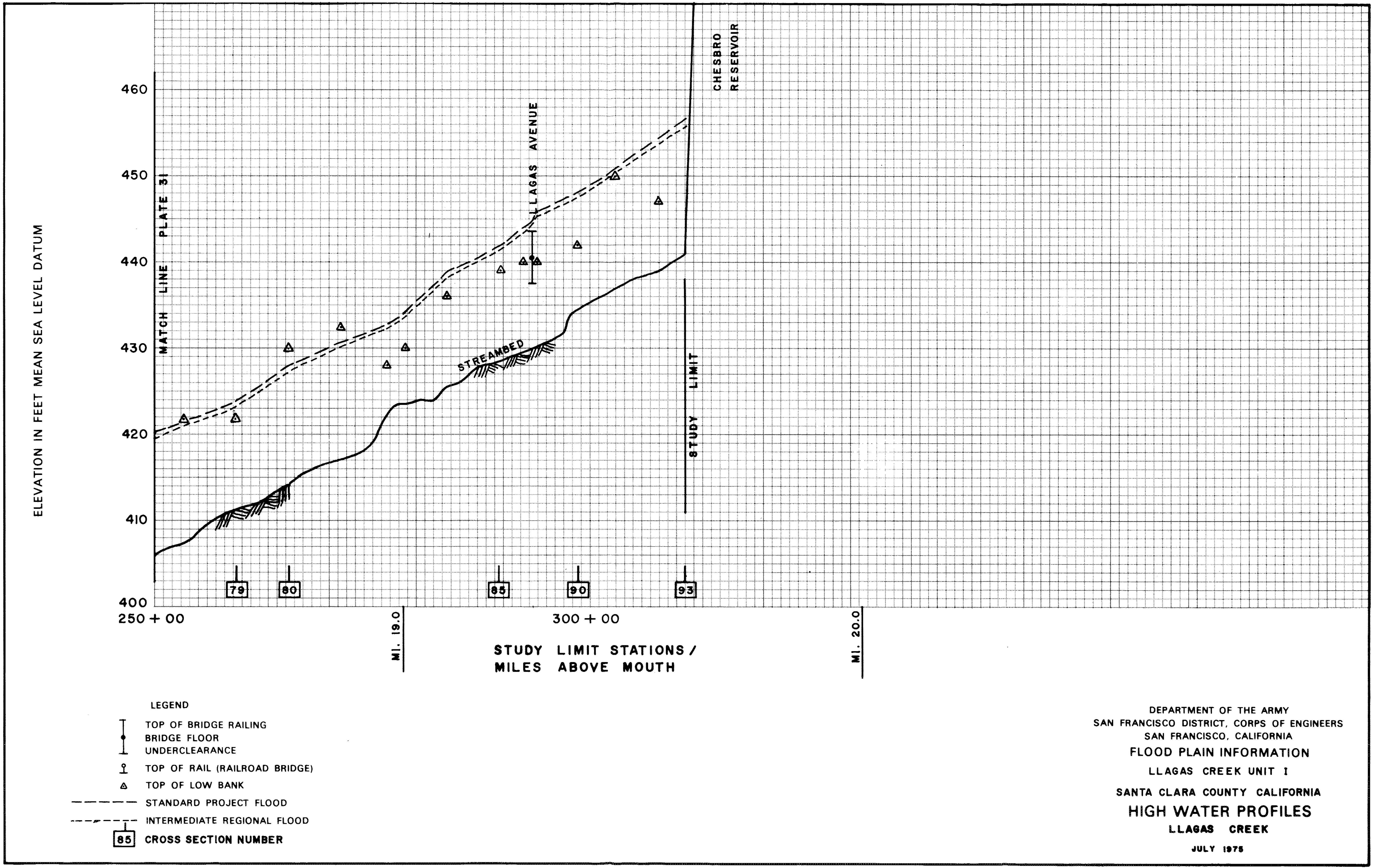
LLAGAS CREEK UNIT I

SANTA CLARA COUNTY CALIFORNIA

HIGH WATER PROFILES

LLAGAS CREEK

JULY 1975



DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

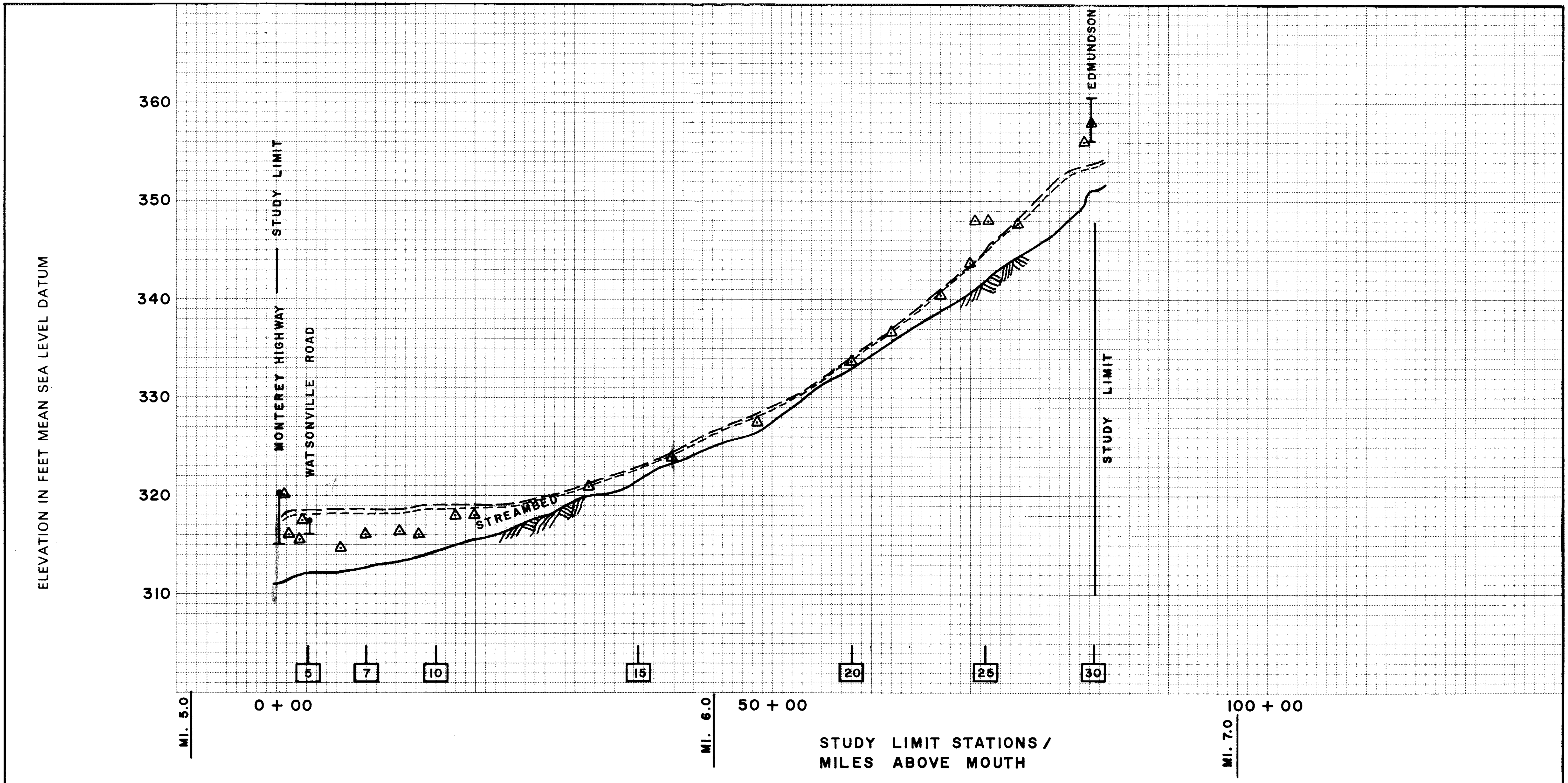
LLAGAS CREEK UNIT I

SANTA CLARA COUNTY CALIFORNIA

HIGH WATER PROFILES

LLAGAS CREEK

JULY 1975



LEGEND

- I TOP OF BRIDGE RAILING
- ● BRIDGE FLOOR
- I UNDERCLEARANCE
- ⫯ TOP OF RAIL (RAILROAD BRIDGE)
- △ TOP OF LOW BANK
- — — — — STANDARD PROJECT FLOOD
- - - - - - INTERMEDIATE REGIONAL FLOOD
- 15 CROSS SECTION NUMBER

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

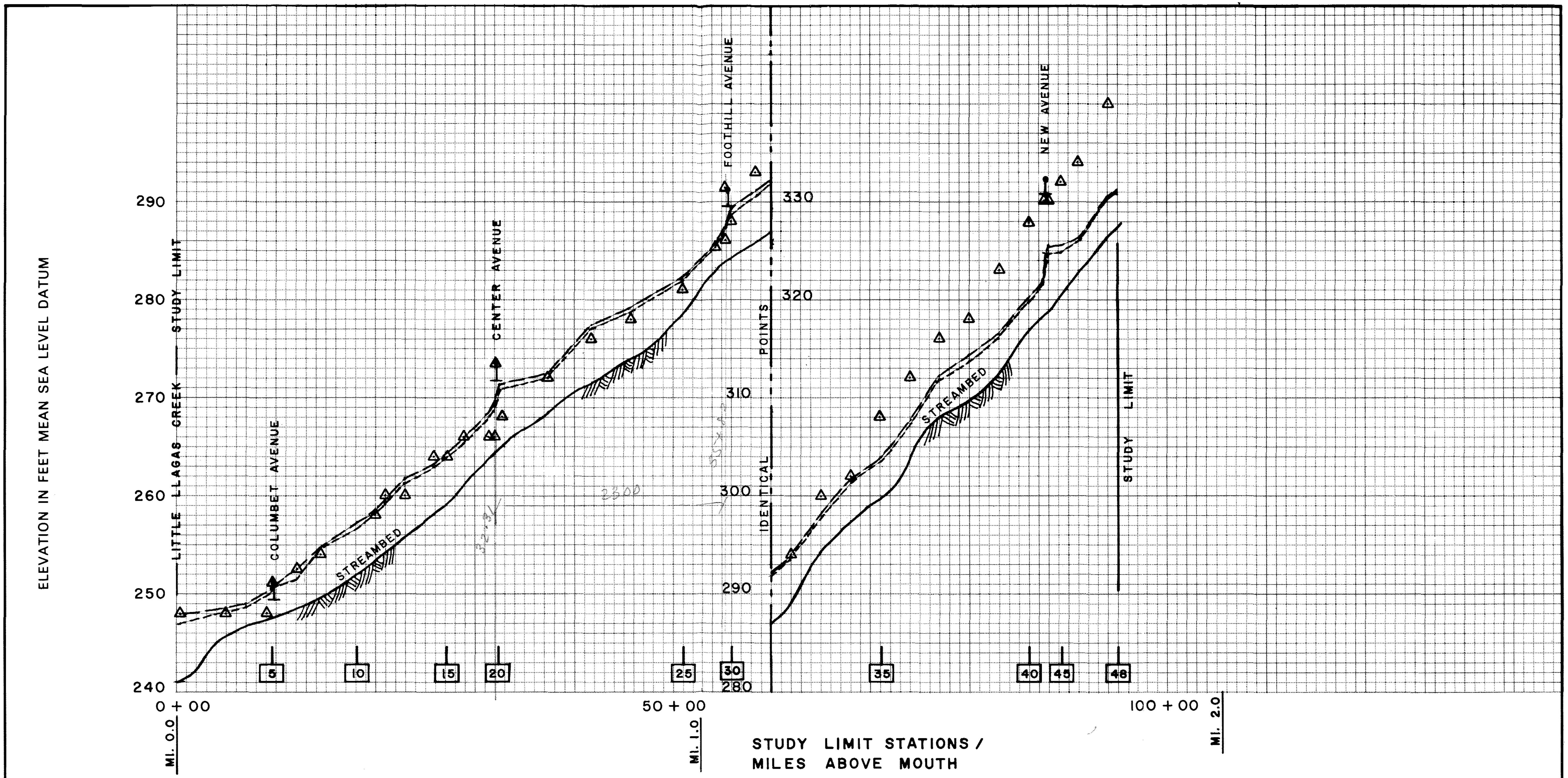
LLAGAS CREEK UNIT I

SANTA CLARA COUNTY CALIFORNIA

HIGH WATER PROFILES

EDMUNDSON (LITTLE LLAGAS) CREEK

JULY 1975



LEGEND

I TOP OF BRIDGE RAILING
BRIDGE FLOOR
UNDERCLEARANCE

TOP OF RAIL (RAILROAD BRIDGE)

△ TOP OF LOW BANK

— — — — STANDARD PROJECT FLOOD

- - - - - INTERMEDIATE REGIONAL FLOOD

25 **CROSS SECTION NUMBER**

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

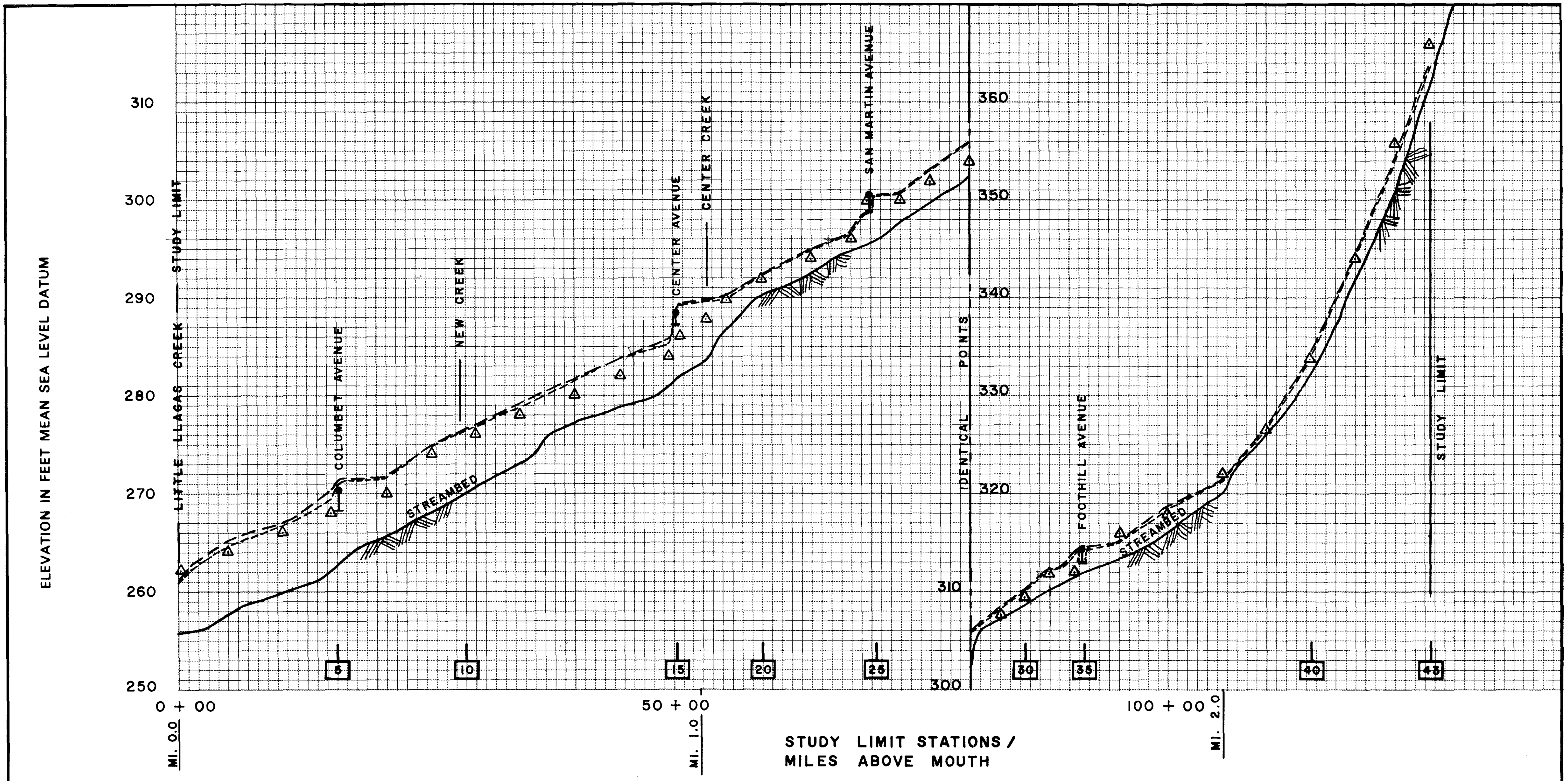
LLAGAS CREEK UNIT I

SANTA CLARA COUNTY CALIFORNIA

HIGH WATER PROFILES

CHURCH CREEK

JULY 1975



LEGEND

- TOP OF BRIDGE RAILING
- BRIDGE FLOOR
- UNDERCLEARANCE
- TOP OF RAIL (RAILROAD BRIDGE)
- △ TOP OF LOW BANK
- — — — — STANDARD PROJECT FLOOD
- – – – – INTERMEDIATE REGIONAL FLOOD
- 15 CROSS SECTION NUMBER

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

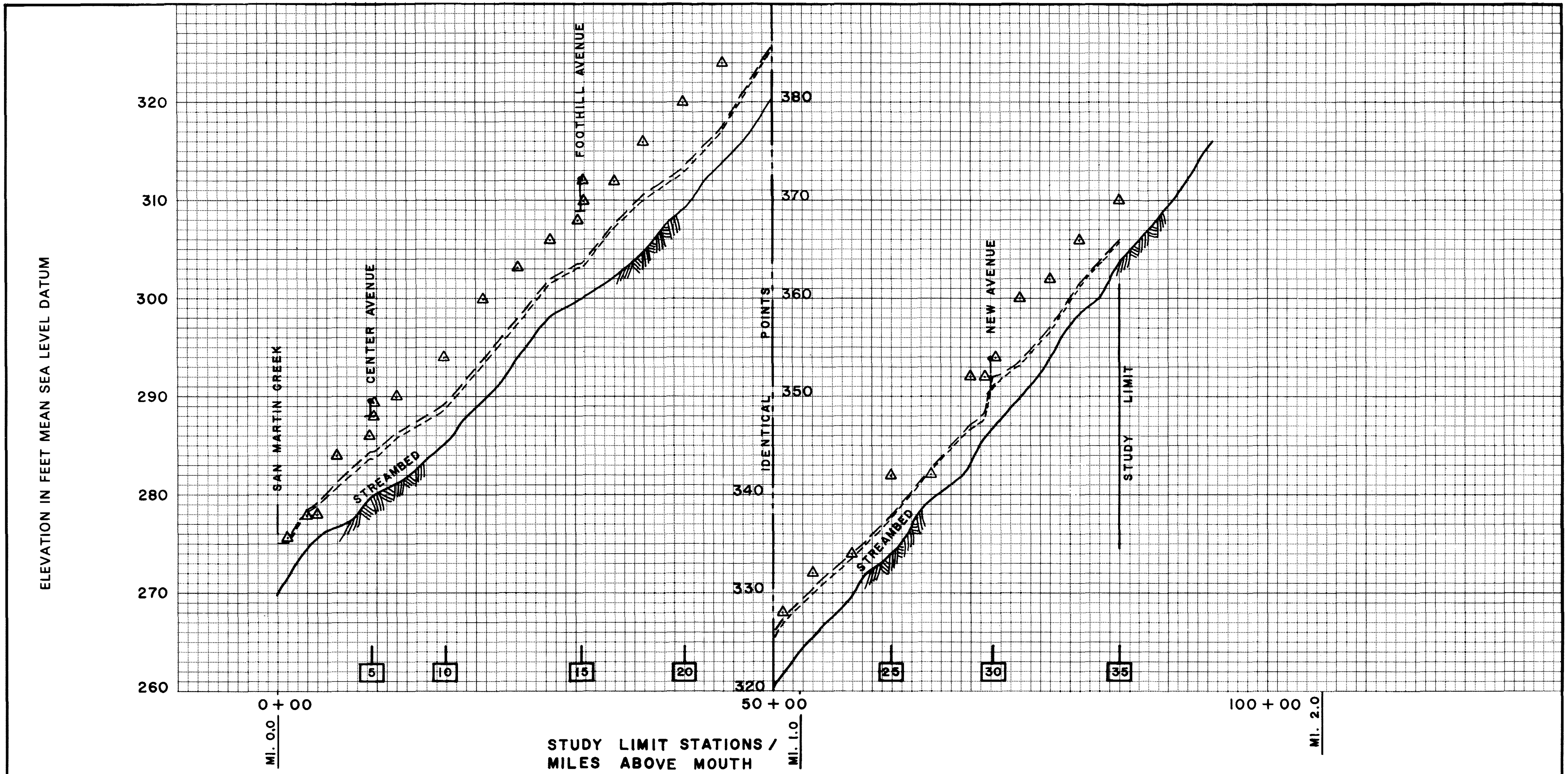
SANTA CLARA COUNTY CALIFORNIA

HIGH WATER PROFILES

SAN MARTIN CREEK

JULY 1975

PLATE 35



LEGEND

TOP OF BRIDGE RAILING
BRIDGE FLOOR
UNDERCLEARANCE
TOP OF RAIL (RAILROAD BRIDGE)
△ TOP OF LOW BANK
——— STANDARD PROJECT FLOOD
- - - - INTERMEDIATE REGIONAL FLOOD
10 CROSS SECTION NUMBER

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

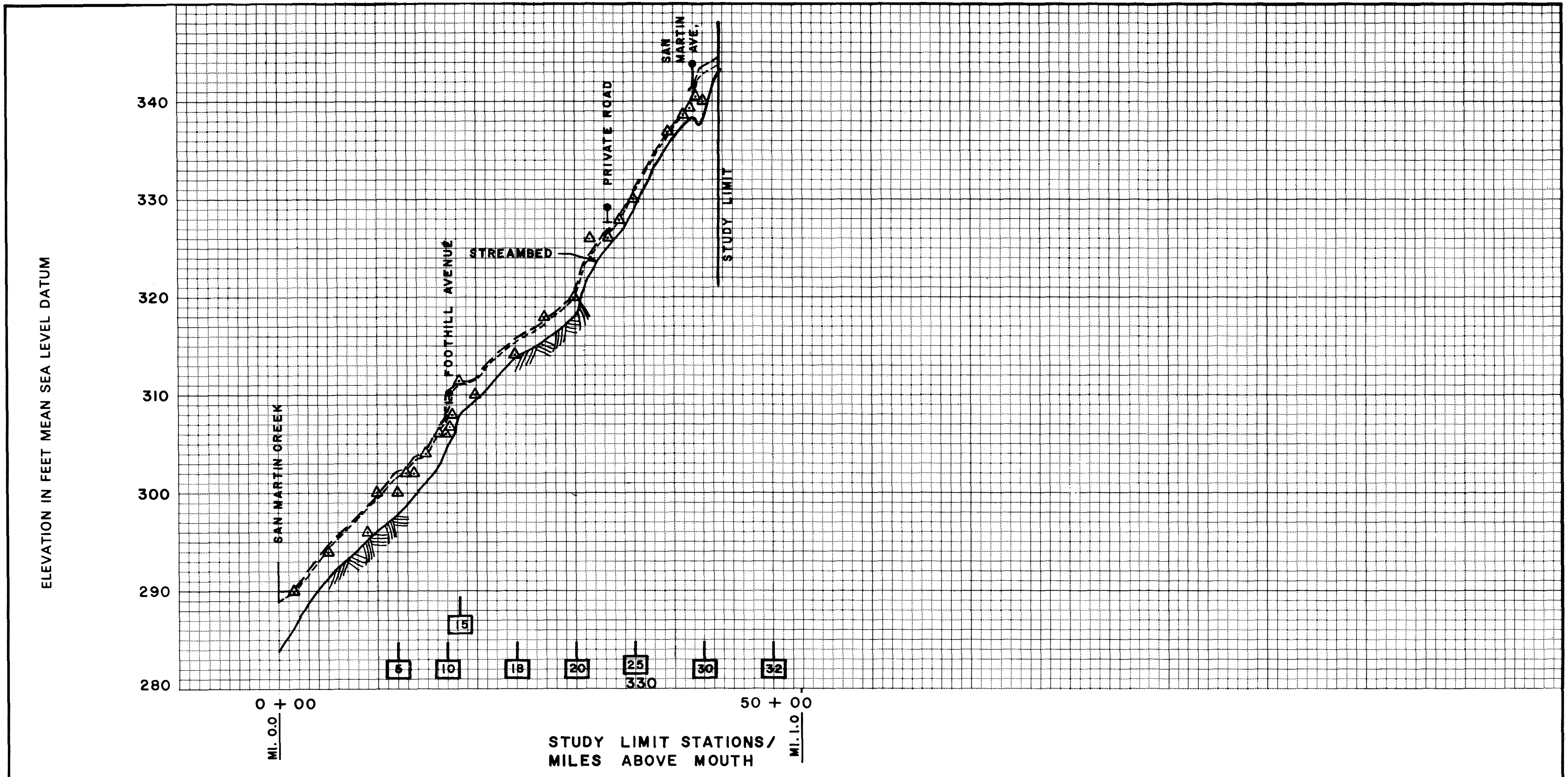
LLAGAS CREEK UNIT I

SANTA CLARA COUNTY CALIFORNIA

HIGH WATER PROFILES

NEW CREEK

JULY 1975



LEGEND

- TOP OF BRIDGE RAILING
- BRIDGE FLOOR
- UNDERCLEARANCE
- TOP OF RAIL (RAILROAD BRIDGE)
- △ TOP OF LOW BANK
- ------ STANDARD PROJECT FLOOD
- --·--·-- INTERMEDIATE REGIONAL FLOOD
- 20 CROSS SECTION NUMBER

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

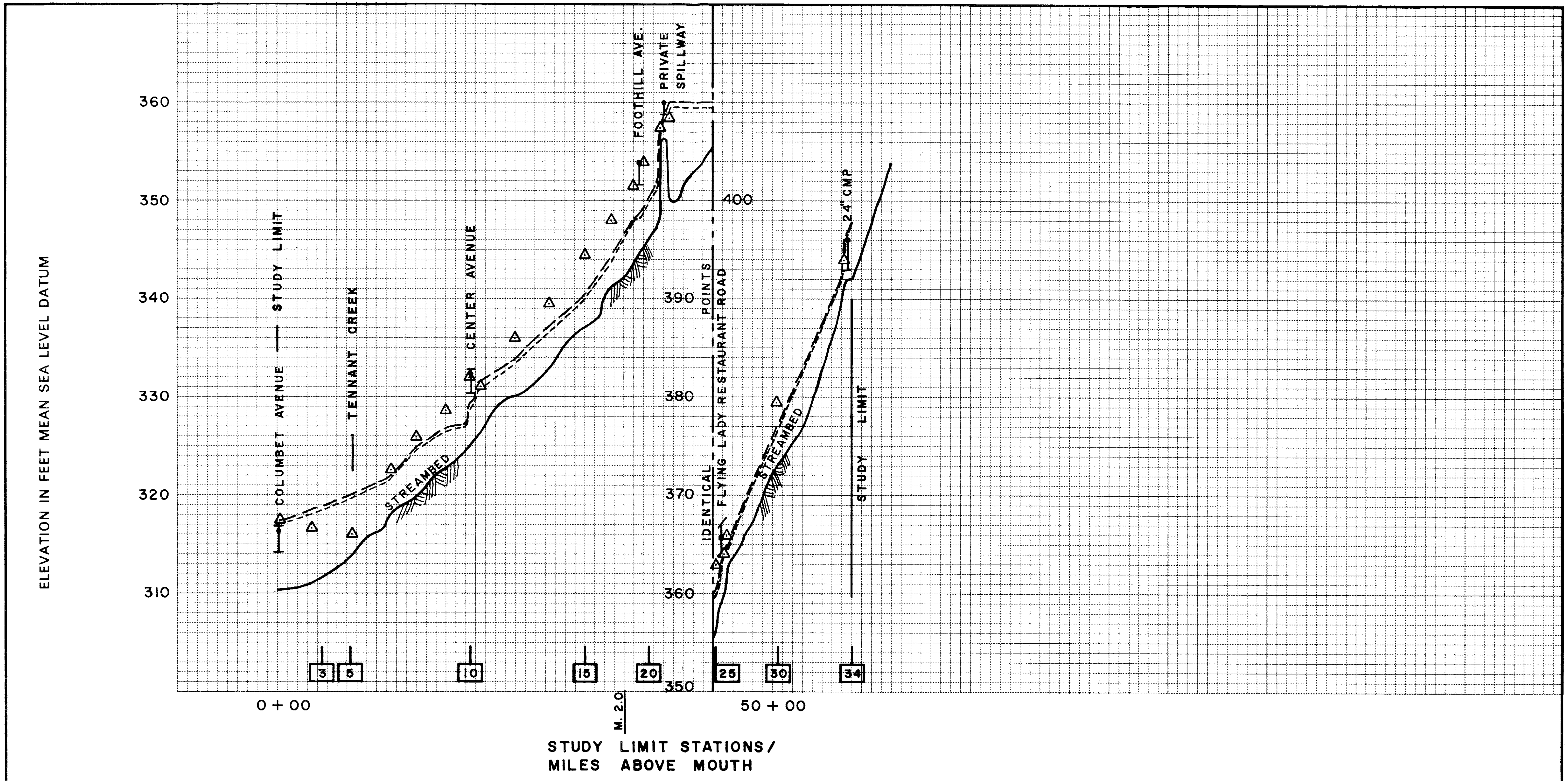
SANTA CLARA COUNTY CALIFORNIA

HIGH WATER PROFILES

CENTER CREEK

JULY 1975

PLATE 37



LEGEND

- I TOP OF BRIDGE RAILING
- ● BRIDGE FLOOR
- I UNDERCLEARANCE
- ⫯ TOP OF RAIL (RAILROAD BRIDGE)
- △ TOP OF LOW BANK
- — — — — STANDARD PROJECT FLOOD
- - - - - - INTERMEDIATE REGIONAL FLOOD
- [25] **CROSS SECTION NUMBER**

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

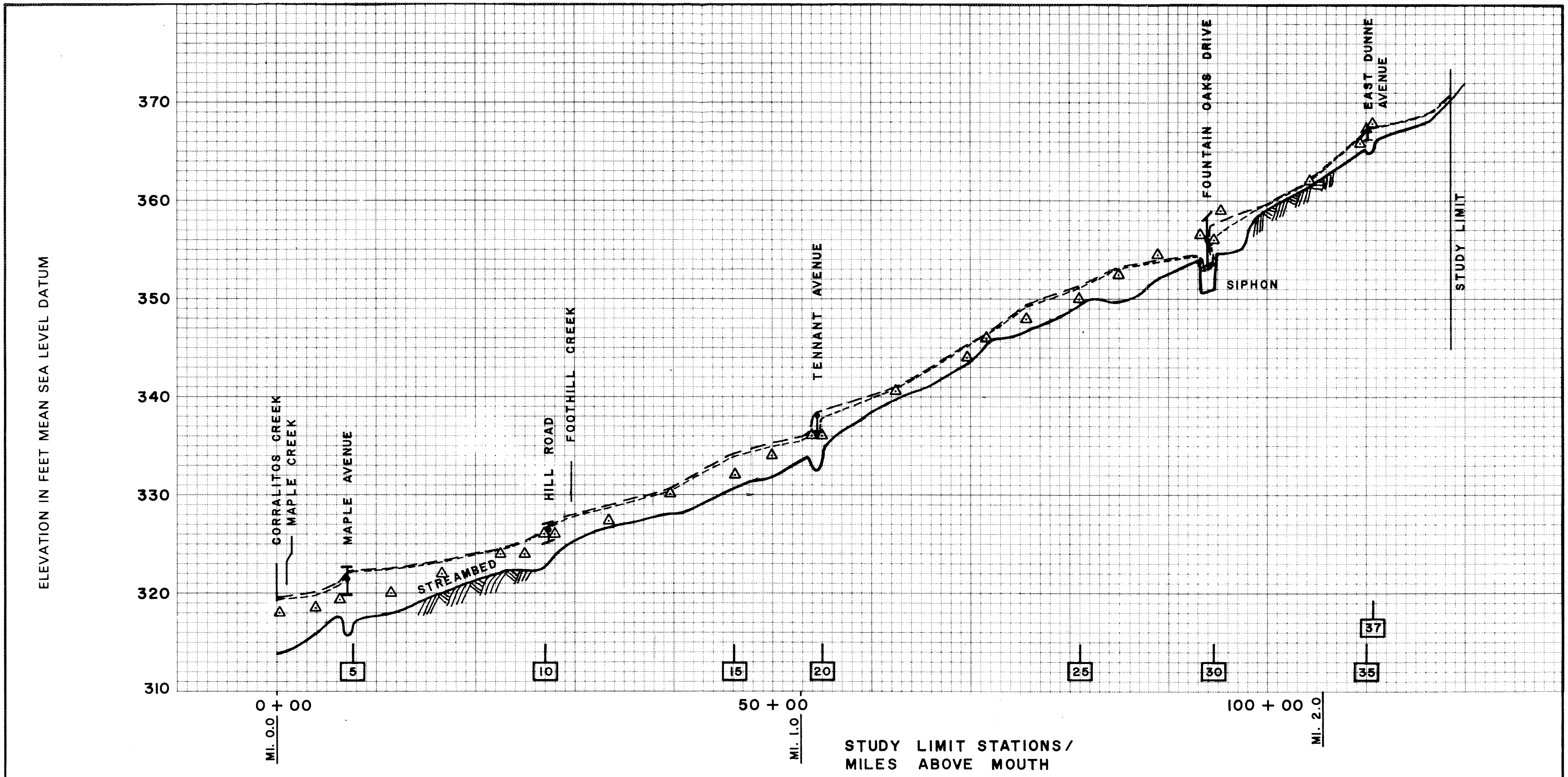
LLAGAS CREEK UNIT I

SANTA CLARA COUNTY CALIFORNIA

HIGH WATER PROFILES

CORRALITOS CREEK

JULY 1975



LEGEND

- TOP OF BRIDGE RAILING
- BRIDGE FLOOR
- UNDERCLEARANCE
- TOP OF RAIL (RAILROAD BRIDGE)
- △ TOP OF LOW BANK
- ——— STANDARD PROJECT FLOOD
- – – – INTERMEDIATE REGIONAL FLOOD
- 5 CROSS SECTION NUMBER

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

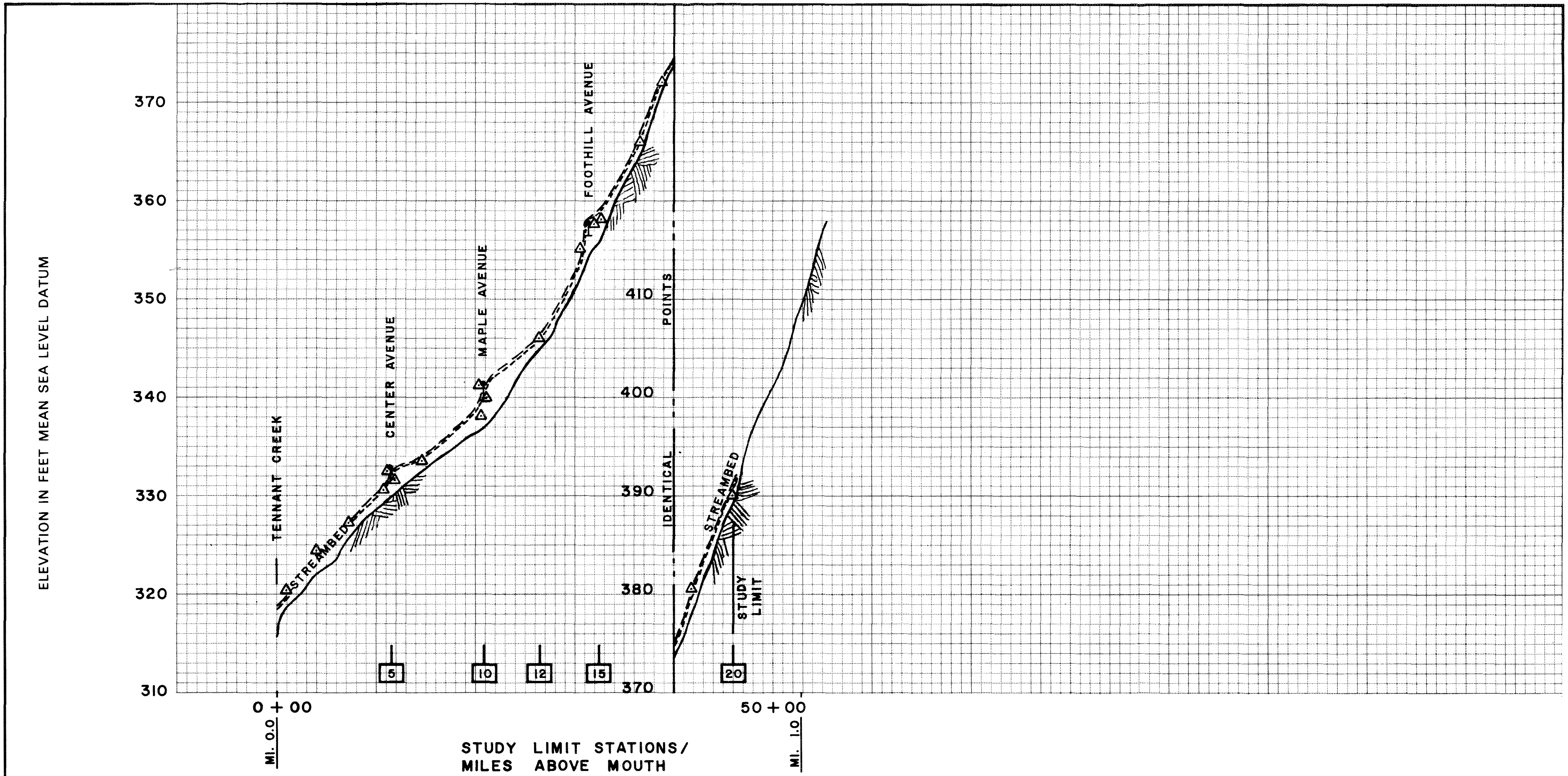
LLAGAS CREEK UNIT I

SANTA CLARA COUNTY CALIFORNIA

HIGH WATER PROFILES

TENNANT CREEK

JULY 1975



LEGEND

- TOP OF BRIDGE RAILING
- BRIDGE FLOOR
- UNDERCLEARANCE
- TOP OF RAIL (RAILROAD BRIDGE)
- △ TOP OF LOW BANK
- — — — — STANDARD PROJECT FLOOD
- - - - - - INTERMEDIATE REGIONAL FLOOD
- **10 CROSS SECTION NUMBER**

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

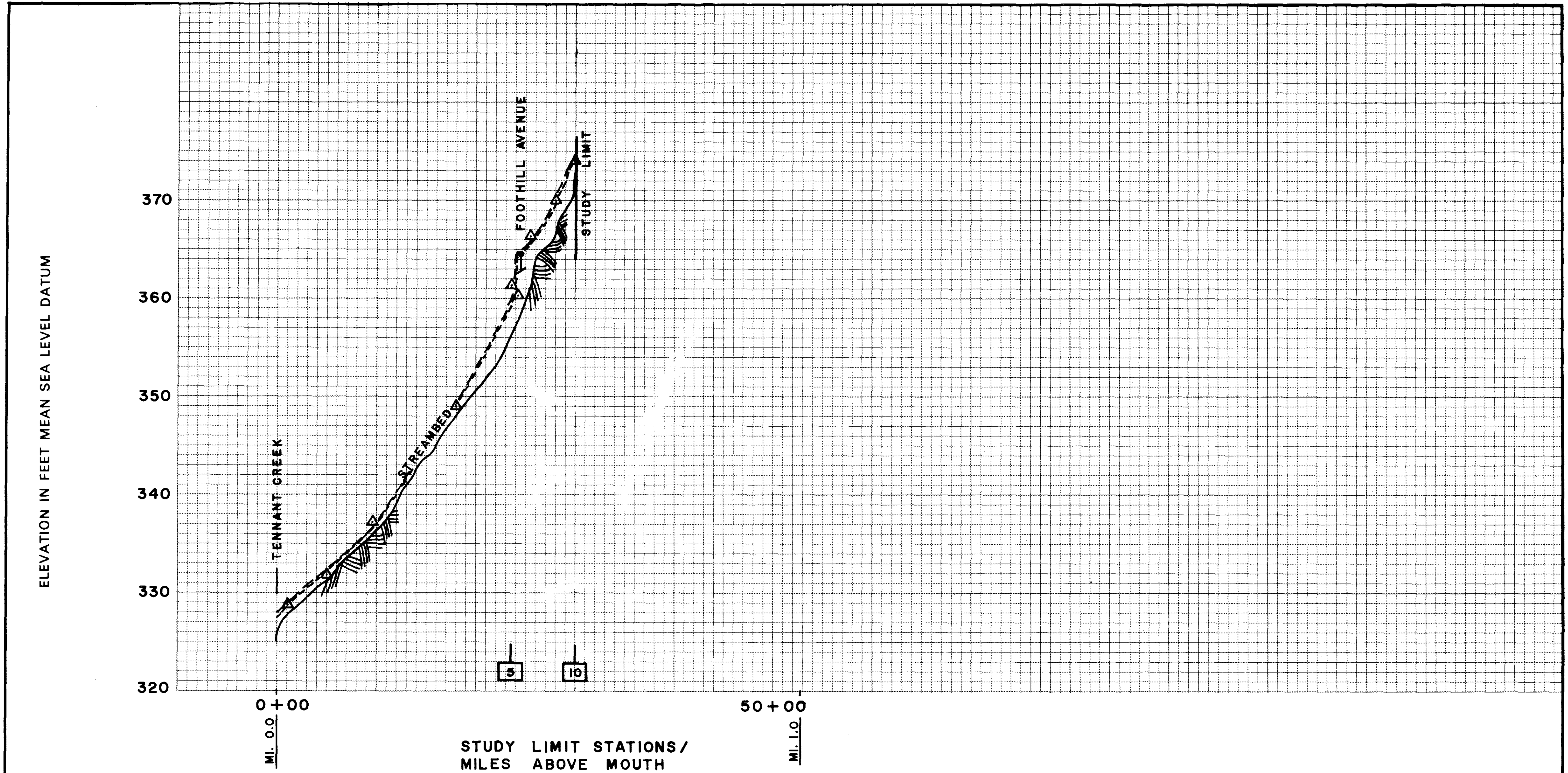
SANTA CLARA COUNTY CALIFORNIA

HIGH WATER PROFILES

MAPLE CREEK

JULY 1975

PLATE 40



LEGEND

TOP OF BRIDGE RAILING
BRIDGE FLOOR
UNDERCLEARANCE
TOP OF RAIL (RAILROAD BRIDGE)
△ TOP OF LOW BANK
—————— STANDARD PROJECT FLOOD
——–——– INTERMEDIATE REGIONAL FLOOD
5 CROSS SECTION NUMBER

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

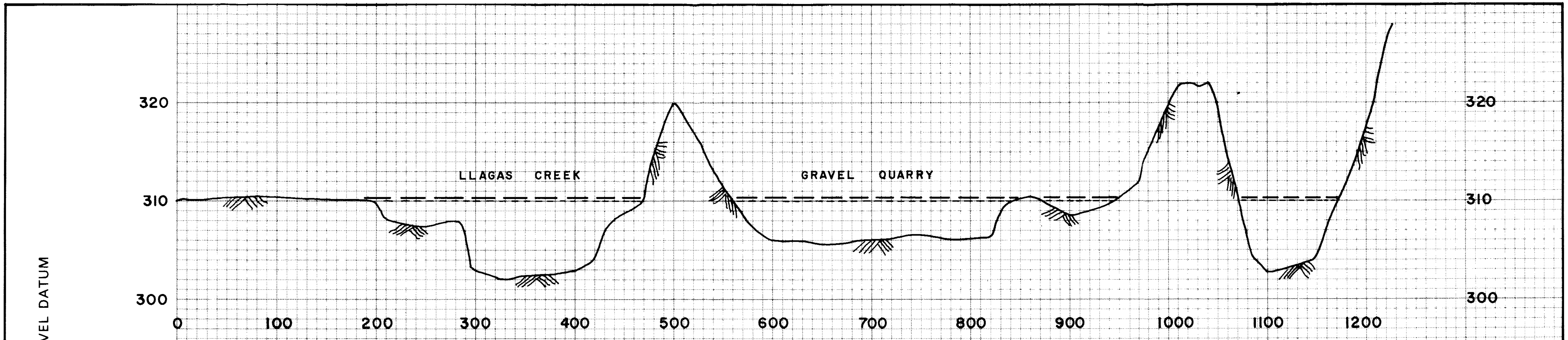
FLOOD PLAIN INFORMATION

LLAGAS CREEK UNIT I

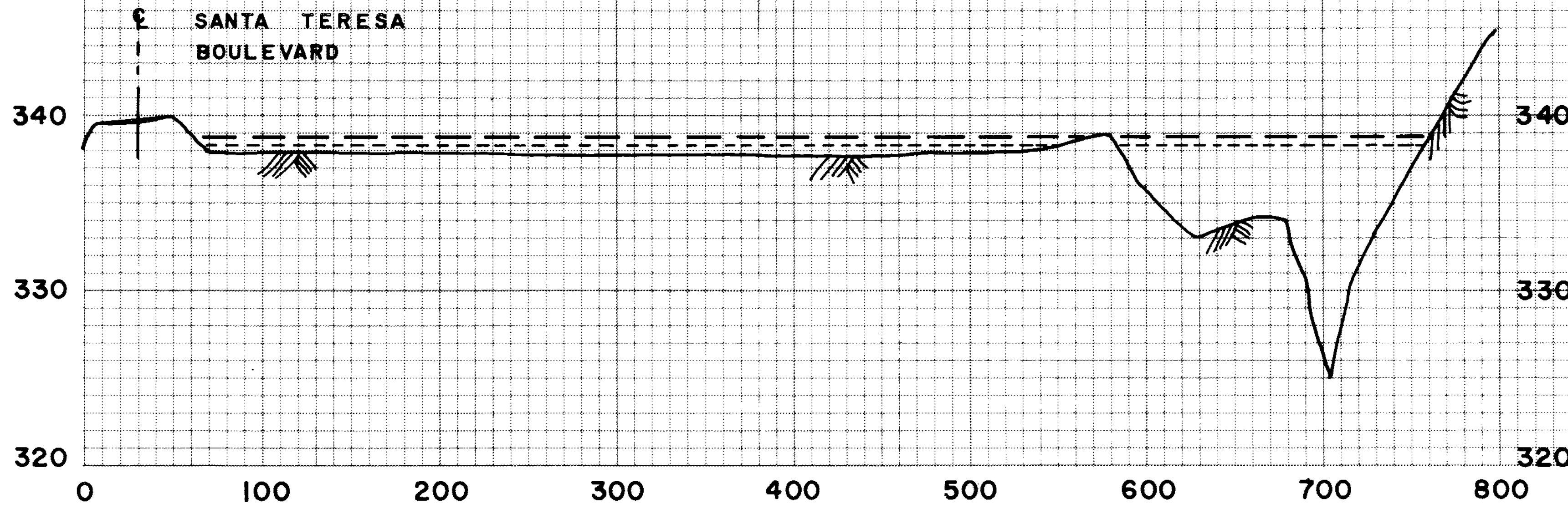
SANTA CLARA COUNTY CALIFORNIA

HIGH WATER PROFILES
FOOTHILL CREEK

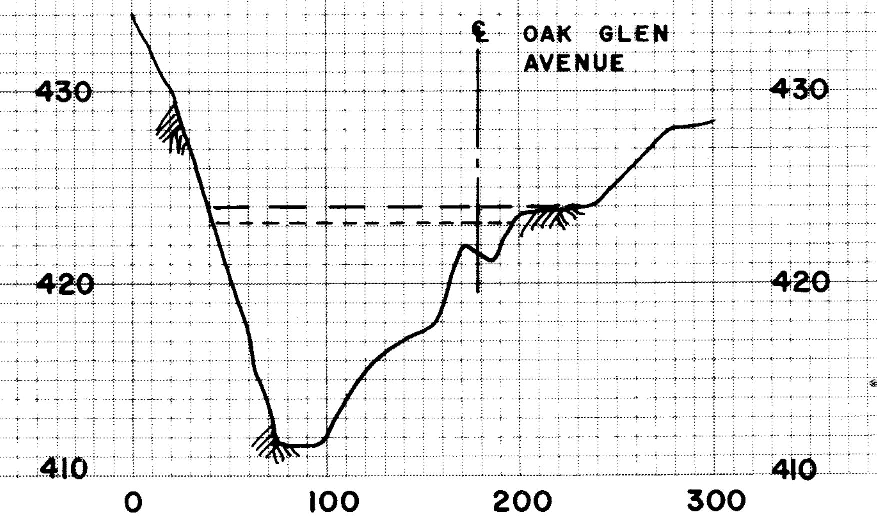
JULY 1975



CROSS SECTION NO. 11
LLAGAS CREEK
STATION 25 + 30 / MILE 14.20



CROSS SECTION NO. 29
LLAGAS CREEK
STATION 90 + 00 / MILE 15.43



CROSS SECTION NO. 79
LLAGAS CREEK
STATION 259 + 30 / MILE 18.64

LEGEND

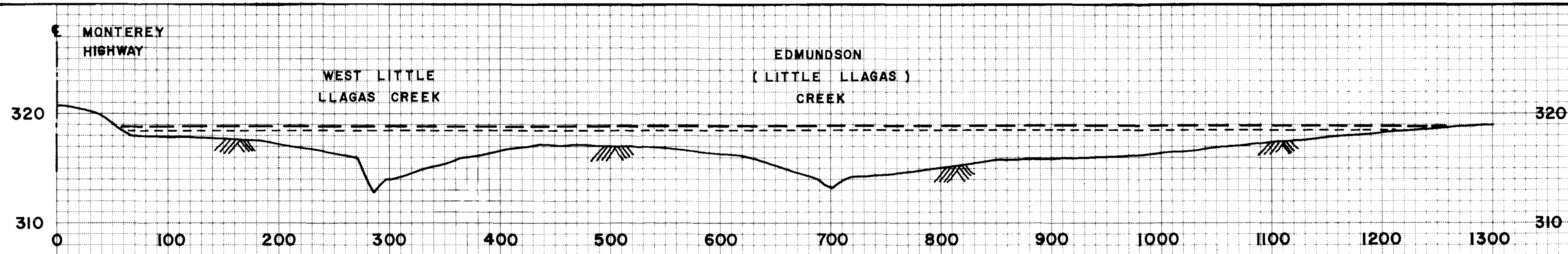
— — — — STANDARD PROJECT FLOOD
- - - - - - - - INTERMEDIATE REGIONAL FLOOD
SECTIONS TAKEN LOOKING DOWNSTREAM
HORIZONTAL DISTANCE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA
FLOOD PLAIN INFORMATION
LLAGAS CREEK UNIT I
SANTA CLARA COUNTY CALIFORNIA

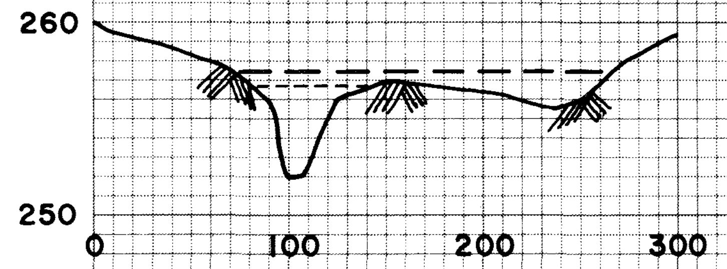
SELECTED CROSS SECTIONS
LLAGAS CREEK

JULY 1975

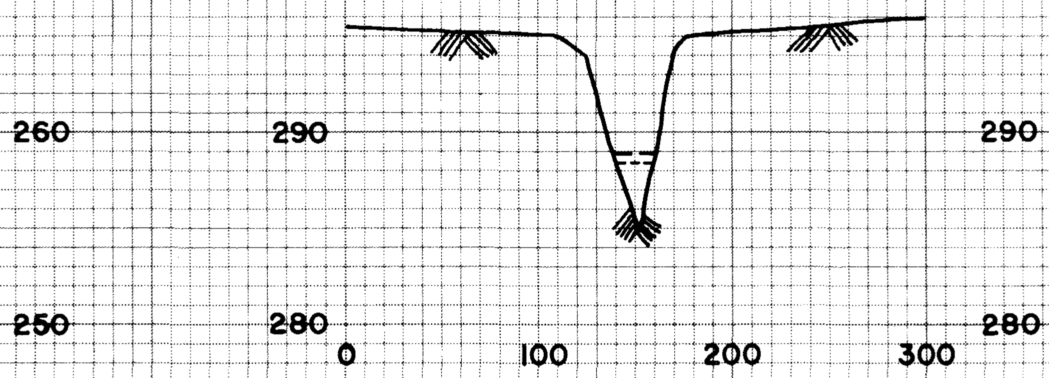
ELEVATION IN FEET MEAN SEA LEVEL DATUM



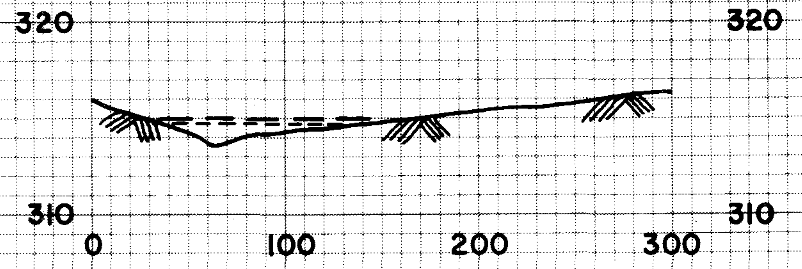
CROSS SECTION NO. 7
EDMUNDSON (LITTLE LLAGAS) CREEK
STATION 9 + 00 / MILE 5.33



CROSS SECTION NO. 10
CHURCH CREEK
STATION 18 + 10 / MILE 0.34



CROSS SECTION NO. 10
NEW CREEK
STATION 16 + 90 / MILE 0.32

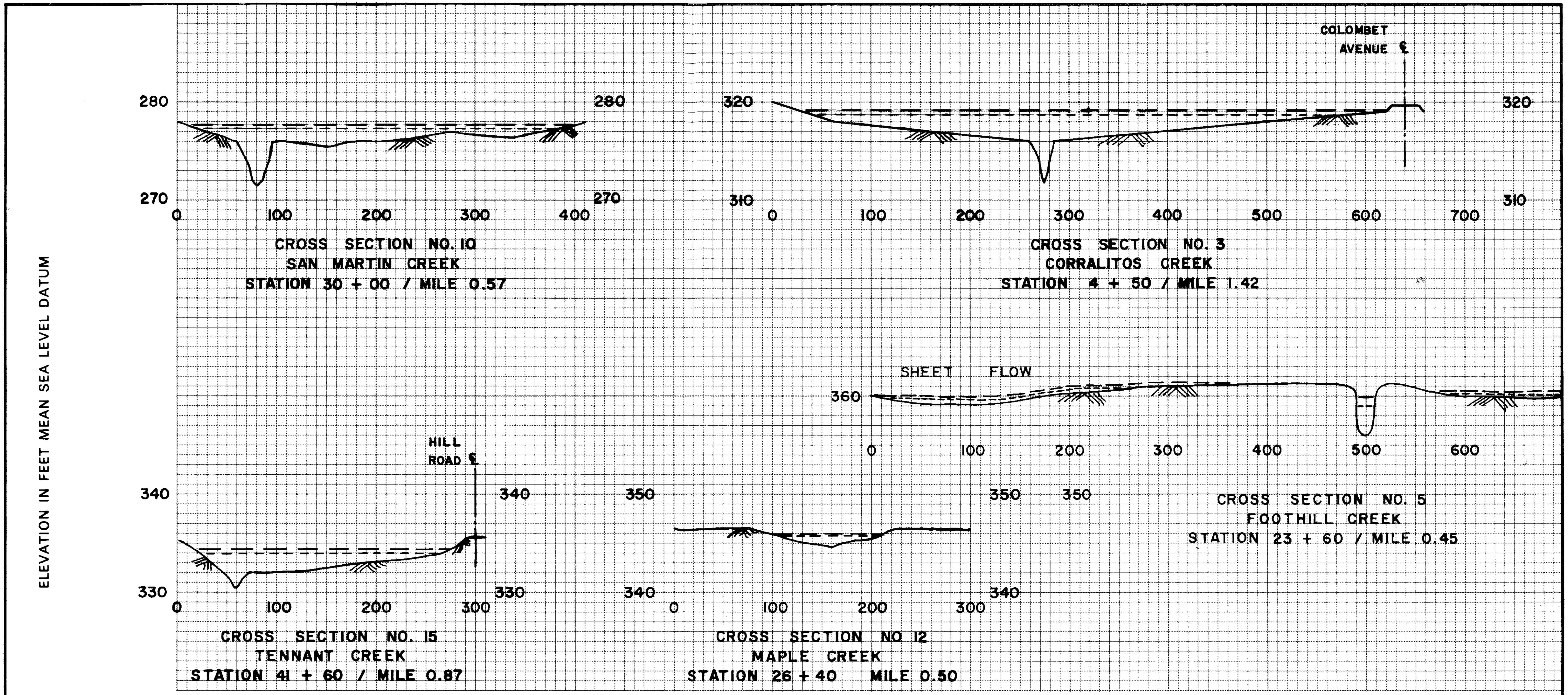


CROSS SECTION NO. 18
CENTER CREEK
STATION 24 + 00 / MILE 0.45

LEGEND

— — — — STANDARD PROJECT FLOOD
- - - - - - - - INTERMEDIATE REGIONAL FLOOD
SECTIONS TAKEN LOOKING DOWNSTREAM
HORIZONTAL DISTANCE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA
FLOOD PLAIN INFORMATION
LLAGAS CREEK UNIT I
SANTA CLARA COUNTY CALIFORNIA
SELECTED CROSS SECTIONS
EDMUNDSON (LITTLE LLAGAS), CHURCH,
NEW AND CENTER CREEKS
JULY 1975



CROSS SECTION NO. 10
SAN MARTIN CREEK
STATION 30 + 00 / MILE 0.57

CROSS SECTION NO. 3
CORRALITOS CREEK
STATION 4 + 50 / MILE 1.42

CROSS SECTION NO. 5
FOOTHILL CREEK
STATION 23 + 60 / MILE 0.45

CROSS SECTION NO. 15
TENNANT CREEK
STATION 41 + 60 / MILE 0.87

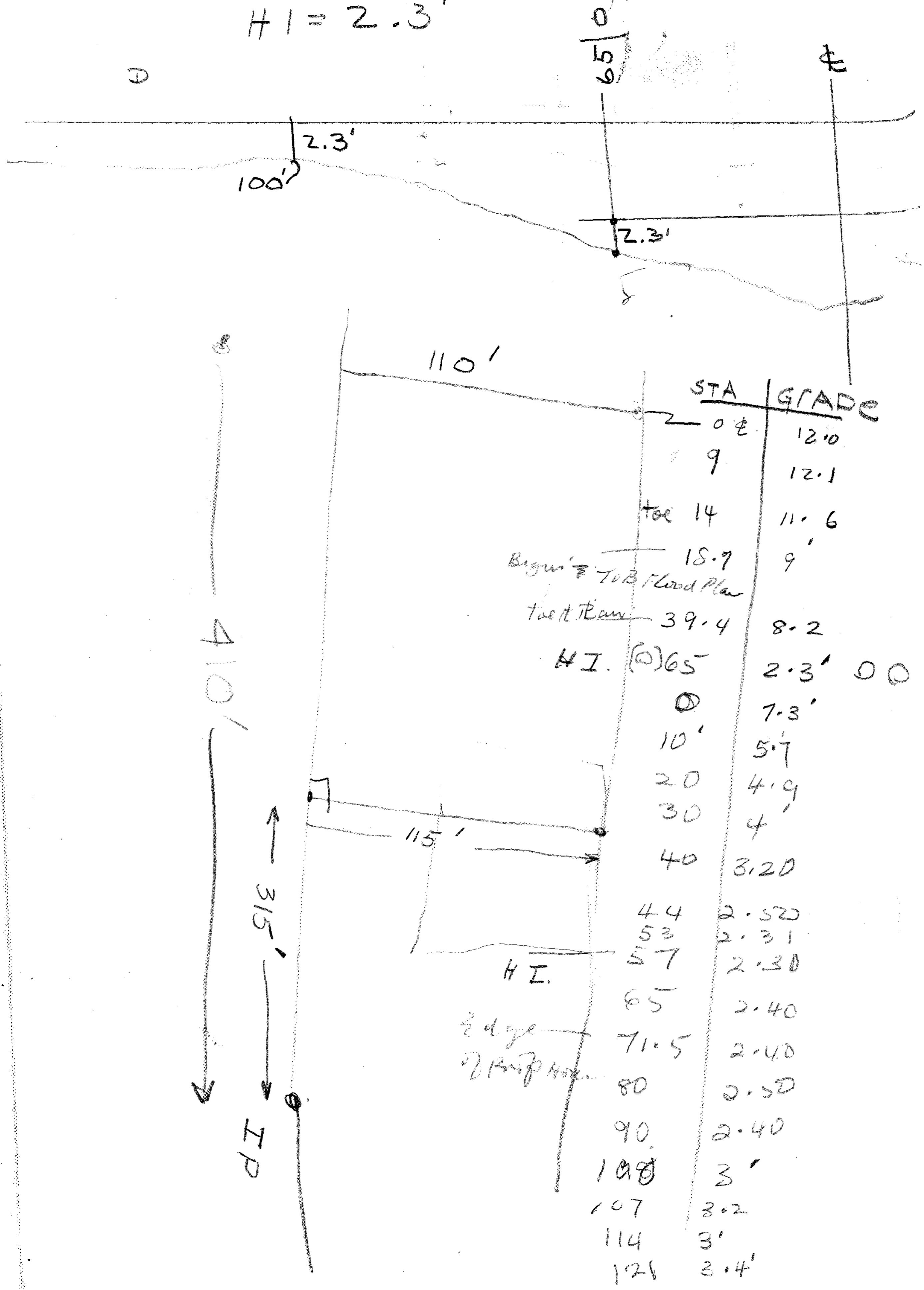
CROSS SECTION NO 12
MAPLE CREEK
STATION 26 + 40 MILE 0.50

LEGEND

— — — — STANDARD PROJECT FLOOD
- - - - - - - - INTERMEDIATE REGIONAL FLOOD
SECTIONS TAKEN LOOKING DOWNSTREAM
HORIZONTAL DISTANCE IN FEET

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA
FLOOD PLAIN INFORMATION
LLAGAS CREEK UNIT I
SANTA CLARA COUNTY CALIFORNIA
SELECTED CROSS SECTIONS
SAN MARTIN, CORRALITOS, TENNANT,
MAPLE AND FOOTHILL CREEKS
JULY 1975

PLATE 44



STA	GRADE
0 ℄	12.0
9	12.1
Toe 14	11.6
Begin TOB Flood Plain 18.9	9'
Toe of Plain 39.4	8.2
H.I. (0)65	2.3' 00
0	7.3'
10'	5.7
20	4.9
30	4'
40	3.20
44	2.50
53	2.31
H.I. 57	2.30
65	2.40
Edge of [illegible] 71.5	2.40
80	2.50
90	2.40
100	3'
107	3.2
114	3'
121	3.4'